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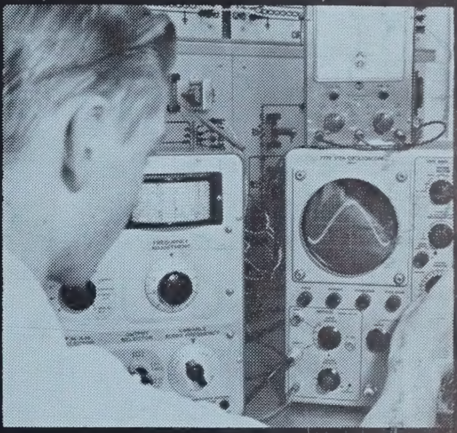
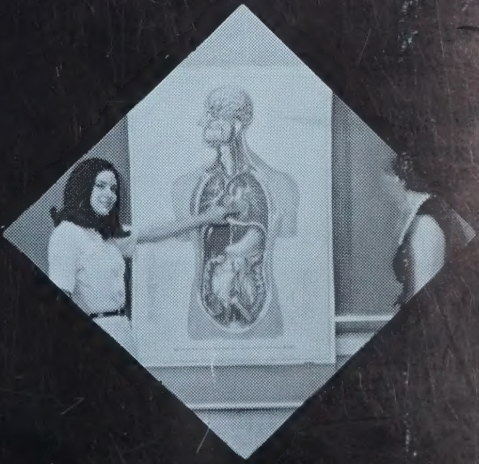


Chapel Hill High School Library



Technical Institute of Alamance
411 Camp Road
Burlington, North Carolina 27215
Phone CA 6-6307

CATALOGUE 1966-68

TECHNICAL INSTITUTE

of

ALAMANCE

Chapel Hill High School Library

411 CAMP ROAD

TELEPHONE 226-6307

BURLINGTON, NORTH CAROLINA

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CORRESPONDENCE DIRECTORY

For prompt handling, please address inquiries as indicated below:

General Information	Office of the President
Business Matters and Expenses	Office of the President
Admissions, Evaluation of Credits, Registration, Counseling Services for Prospective Students, Scholarships, Finances, Placement, Transcripts, and Academic Reports	Director of Student Personnel
Vocational-Technical Programs	Director of Vocational-Technical Programs
Evening Programs	Director of Evening Programs
General Adult Education	Director of General Adult Education

Visitors are welcome at the Technical Institute of Alamance. The Administrative Offices are open Monday through Thursday from 8:30 a.m. to 10:00 p.m. and Friday from 8:30 until 5:00 p.m. Visitors desiring interviews with members of the staff are urged to make appointments in advance.

A MAP OF THE CAMPUS WILL BE FOUND ON THE INSIDE BACK COVER.

The Legal and Corporate Name of the Institution is:

"TECHNICAL INSTITUTE OF ALAMANCE"

TECHNICAL INSTITUTE OF ALAMANCE

Calendar—1966-67

FALL QUARTER

Registration	September 6
Orientation	September 6
Classes Begin	September 7
Classes End	November 23

WINTER QUARTER

Registration	November 29
Classes Begin	November 30
Christmas Holidays	December 22-January 1 (incl.)
Classes End	February 24

SPRING QUARTER

Registration	March 1
Classes Begin	March 2
Easter Holidays	March 24-27
Classes End	May 23

SUMMER QUARTER

Registration	June 5
Classes Begin	June 6
Independence Day Holiday	July 4
Classes End	August 23
Graduation Exercises	August 23

TECHNICAL INSTITUTE OF ALAMANCE

Burlington, North Carolina

ADMINISTRATION

STATE BOARD OF EDUCATION

Dr. Dallas Herring	Chairman

DEPARTMENT OF COMMUNITY COLLEGES

Dr. I. E. Ready	Director, Department of Community Colleges
Anthony J. Bevacqua	Assistant Director, Division of Vocational-Technical Programs
Dr. Monroe C. Neff	Assistant Director, Division of General Adult Education Programs

BOARD OF TRUSTEES

TECHNICAL INSTITUTE OF ALAMANCE

Clarence Hooper (Chairman)
Technical Director
Burlington House Fabrics Co.

Bernie Bean (Vice-Chairman)
Assistant Production Manager
White Furniture Co.

Hubert Green
Industrial Engineer
Burlington Industries, Inc.

Wallace Gee
President-Treasurer
Ewing Motors, Inc.

J. Nimrod Harris
Secretary-Treasurer
Annedeen Hosiery

J. Robert Holt
Vice-President
The Mebane Company

Mrs. B. Tate Horton
Homemaker

John W. Jeffries
Retired
Agricultural Agent

James W. Pierce
Engineering Department Chief
Western Electric Co.

Myron Rhyne
Executive Vice-President
Travora Textiles, Inc.

Dr. Carl Sellars
Veterinarian
Alamance Veterinary Hospital

D. J. Walker, Jr.
Partner-Attorney
Long, Ridge, Harris and Walker

ADMINISTRATIVE & SUPERVISORY OFFICERS

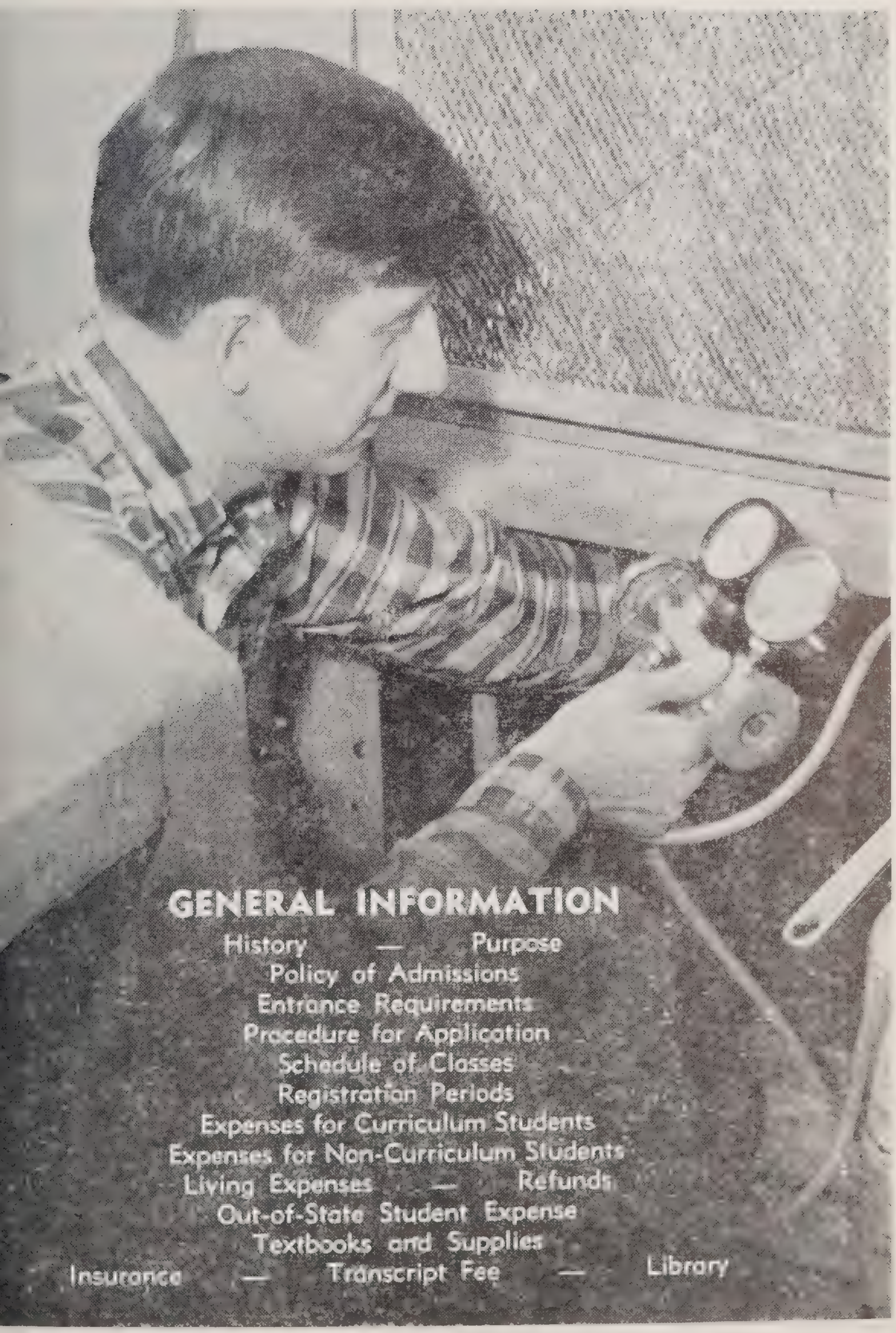
William E. Taylor	President
Floyd D. Turnage	Director of Vocational-Technical Programs
Ray N. Easter	Director of Student Personnel
William F. Ross, Jr.	Director of General Adult Education
Bobby L. Minnis	Director of Evening Programs
James M. Pickard	Consultant Fire Service Training
Paul C. Davis	Extension Director of Basic Adult Education
Mrs. Effie R. Lambert	Bookkeeper

SECRETARIAL STAFF

Mrs. Faye L. Estes	Secretary
Mrs. Jackie G. Garner	Secretary
Mrs. Janis G. Murray	Secretary
Mrs. Alice M. Reavis	Secretary
Mrs. Cheryl Spivey	Secretary

FULL-TIME FACULTY

Pedro Alomia	Department Head, Air Cond. & Refrigeration
Thomas W. Andrew	Electronics
Mrs. Rebecca M. Baker	Fundamentals Learning Laboratory
Vernon M. Cheek	Accounting
J. Dillon Cherry	Department Head, Business Administration
Miss Evelyn Davis	Department Head, Practical Nursing
Gilmer W. Dodson	Department Head, Data Processing
Garvin J. Ducker	Drafting
Miss Frances Durant	Art and Social Studies
R. Wayne Feamster	Department Head, Commercial Art
Robert J. Graham	Librarian
Jerry L. Harris	Department Head, Chemical Technology
Mrs. Shirley O. Hull	Communicative Skills
Julius A. Kimbro	Data Processing and Mathematics
Mrs. Mildred B. Lynch	Dental Assistant
Mrs. Jean H. McMillan	Department Head, Secretarial Sciences
Allen W. Moon	Department Head, Machine Shop
James C. Newbold	Department Head, Auto Mechanics
James E. Peeples	Department Head, Electronics
Robert Sutton	Data Processing
Rudy H. Smith	Mathematics
John S. Stewart	Department Head, Drafting
James G. C. Swinney, Jr.	Physics



GENERAL INFORMATION

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Textbooks and Supplies
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GENERAL INFORMATION

HISTORY

The Technical Institute of Alamance was established in 1959. Its establishment was part of a state-wide system known as Industrial Education Centers. Through the cooperative efforts of the State Department of Trade and Industrial Education and the school systems of Alamance County and Burlington, the Burlington-Alamance County Industrial Education Center was begun.

The need for and the development of the institute has been centered on the principle of responsiveness to changing needs and conditions in the area. The expansion of the industrial and technological era in the State has created many new employment opportunities for technically trained personnel. In addition, the right of every individual to have an educational opportunity to develop according to one's potential has been recognized.

The initiation of a state-wide system of Industrial Education Centers was begun in 1957 by the allocation of funds by the General Assembly. In 1959, the General Assembly officially designated this type of vocational school as an Industrial Education Center.

Under legislation enacted in 1963, administration of the Industrial Education Center was transferred to the State Board of Education, Department of Community Colleges. The local control of the institution was vested in a board of trustees by the new legislation.

In continuance of the principle of responsiveness to changing needs and conditions in the area, the Board of Trustees applied to the State Board of Education through the State Department of Community Colleges to become a Technical Institute. The State Board of Education approved the change in status to a Technical Institute in January, 1964. Along with the approval, authority was granted to award the degree, Associate in Applied Science Degree (A.A.S.), in approved programs. In the spring of 1964, the Board of Trustees changed the name of the Institute to Technical Institute of Alamance.

Future development of the Technical Institute of Alamance will, as in the past, be constantly responsive to the educational and occupational as well as culturally oriented needs of the community.

PURPOSE

The purpose of the Technical Institute of Alamance reflects the complexity of the needs of the community. In an effort to be responsive to these needs, curricula have been designed to provide opportunity for training. Occupationally-oriented curricula have been planned for those desiring training for employment at the technician level, in business and commerce, in health-related fields, and in skilled trades. Courses are also included for individuals needing to up-date and up-grade their occupational capabilities to meet the changes of a changing, technological society. Within the Technical Institute of Alamance, individuals are afforded an opportunity to participate in a program of General Adult education for social, cultural, and personal development beyond the high school level, as well as for those who stopped short of high school graduation. Educational services—speakers, resource personnel or materials, special institutes or programs, reading lists, etc. are made available for individuals and organizations upon request.

Guidance and counseling services provided within the institute are designed to assist the individual in the realistic attainment of educational and personal goals.

POLICY OF ADMISSIONS

Through following an "open door" policy of admissions at the Technical Institute of Alamance, it is possible for a high school graduate or a school leaver 18 years old or older needing formal educational opportunity to be served by the institution.

The "open door" policy does not eliminate the restrictions on admission to specific programs. It does mean that these restrictions will be flexible enough under careful guidance to allow a student every reasonable opportunity to prove himself under good teaching. A student will be afforded the opportunity to eliminate admission requirement deficiencies through remedial work, and may remain in the program of remedial work as long as he makes satisfactory progress. As soon as a student can meet the specific admission requirements, he may be enrolled in a curriculum.

ENTRANCE REQUIREMENTS

See page 22 for admission to the Technical Program.
See page 48 for admission to the Vocational Program.
See page 107 for admission to the Adult Education Program.

APPLICATION FOR ADMISSION TO CURRICULUM PROGRAMS

Any person who wishes to take a course or program is asked to complete an application form and return it to the Institute. Upon receipt of the application, the Student Personnel Office will mail promptly to the prospective student instructions regarding admission procedures. Applications should be submitted well in advance of the beginning of the term in which the student desires to enroll. While students may be processed to the day of registration, an early application assures adequate time for the processing of the student and enables entry into a program where enrollment may be limited. Candidates are encouraged to apply early to be assured of a place in class. Classes are closed when maximum enrollment is reached. A student who plans to pursue a diploma or associate degree must ask his high school or college to submit a transcript of all previous work undertaken. Prior to registration, candidates may be requested to appear at the Institute for a personal interview and tests.

SCHEDULE OF CURRICULUM CLASSES

Course Offerings

Shortly before registration day each quarter, the Institute will announce a master schedule of courses to be offered. This will generally include all those courses required for a student to complete the work as outlined in the catalog for his curriculum. In some instances, however, it will be necessary for the Institute to rearrange this sequence of course offerings. Every effort will be made to enable a student to complete his program in the minimum possible time. Whenever practical, make-up classes and special courses will be offered to those needing them.

Using this master schedule of courses, each student will consult with his curriculum department head prior to registration to arrange a class schedule to meet his own particular requirements.

Class Hours

The Institute will normally offer courses from 8:30 a.m. to 10:00 p.m. Monday through Thursday and from 8:30 a.m. to 5:00 p.m. on Friday. Students admitted to a curriculum program may, upon the approval of their department head, register for any of these courses. Those students expressing a preference for either the day or the evening program may expect to have their classes scheduled during these periods:

Day Classes: 8:30- 9:25 a.m.
9:30-10:25 a.m.
10:30-11:25 a.m.
11:30-12:25 p.m.
12:30- 1:25 p.m.
1:30- 2:25 p.m.
2:30- 3:25 p.m.
3:30- 4:25 p.m.
4:30- 5:25 p.m.

Evening Classes: 7:00- 7:55 p.m.
8:00- 8:55 p.m.
9:00- 9:55 p.m.

REGISTRATION PERIODS

The Institute operates on a quarter system. Registration of new students for all curriculum programs occurs at the beginning of the fall quarter in September. Registration in technologies and selected vocational programs may also occur at the beginning of the spring quarter for new students. Continuing students may consult the Institute calendar for specific dates of subsequent registration periods.

EXPENSES FOR CURRICULUM STUDENTS

Tuition fee of $2.50 per credit hour with a maximum tuition charge of $32 per quarter will be charged.

This tuition is due and payable on the day of registration.

EXPENSES FOR NON-CURRICULUM STUDENTS

Fees for these programs or courses will vary according to the course being offered. Refer to the specific program in the General Adult Education section of the catalogue for more detail on expense.

LIVING EXPENSES

Students are encouraged to plan for the usual personal expenses involving lunches, clothing, recreation, transportation, etc.

REFUND POLICY FOR CURRICULUM STUDENTS

Tuition refund for students shall not be made unless the student is, in the judgment of the institution, compelled to withdraw for unavoidable reasons.

In such cases, two thirds (2/3) of the student's tuition may be refunded if the student withdraws within ten (10) calendar days after the first day of classes as published in the school calendar. Tuition refunds will not be considered after that time. Tuition refunds will not be considered for tuitions of five dollars ($5.00) or less, except if a course or curriculum fails to materialize, all the students' tuitions shall be refunded.

OUT-OF-STATE STUDENT EXPENSE

Any student whose legal residence is outside the State of North Carolina, or in the case of younger students who are boarding or living with relatives in the community and whose parents or guardians may be outside the state, will pay registration and tuition fees 2½ times the in-state rate, except where Federal or State law prohibits.

TEXTBOOKS AND SUPPLIES

For student convenience, the Technical Institute of Alamance maintains a bookstore in which books and other required items necessary to a program of study may be purchased by the student. The cost of these items varies according to the program the student elects to pursue. Since these items may be used on the first days of classes, they should be purchased on the day of registration.

INSURANCE

Scholastic insurance is available at very nominal cost and is strongly recommended for curriculum students in shop and lab areas.

TRANSCRIPT FEE

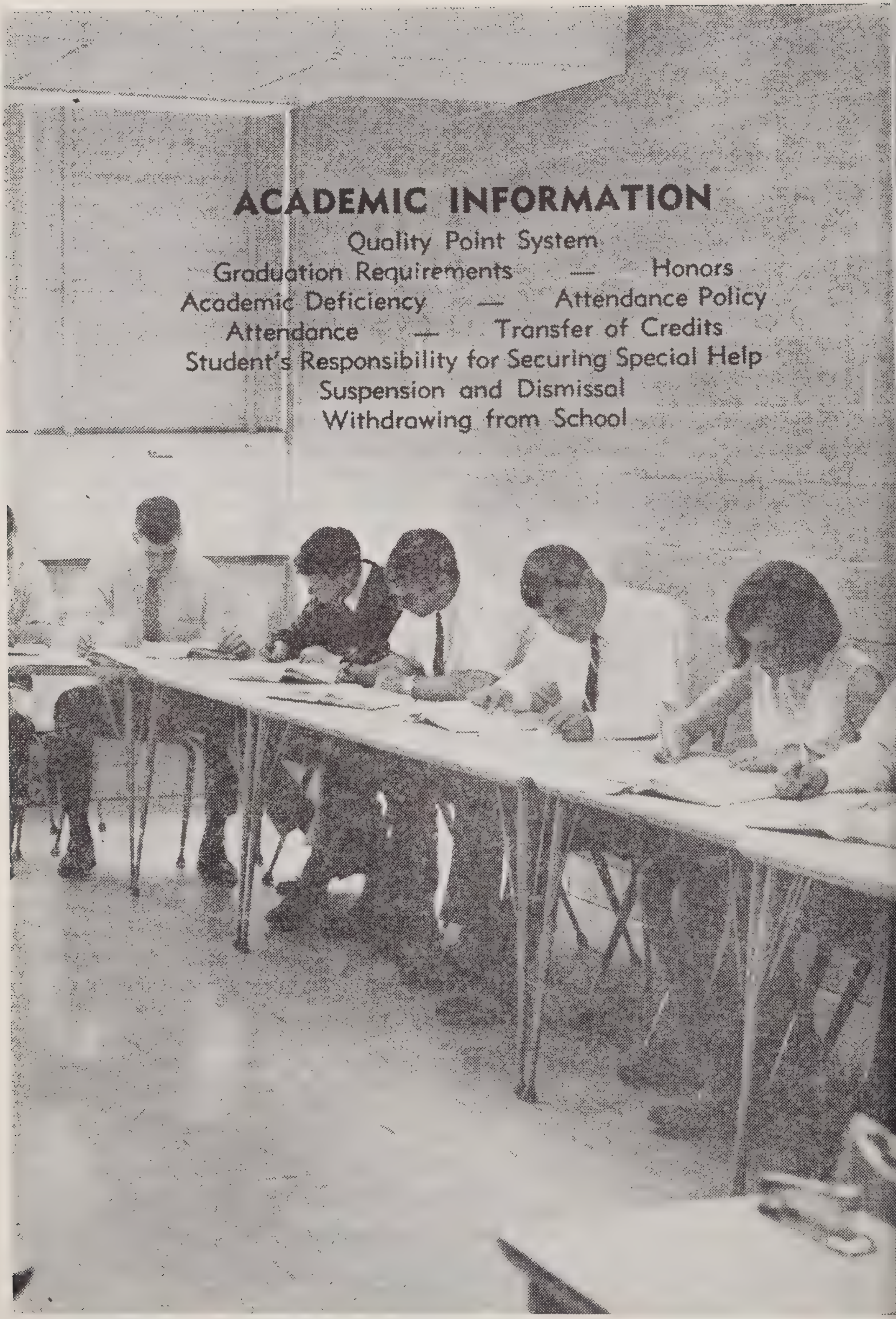
After the initial transcript is issued, a $1 fee will be charged for each subsequent transcript.

LIBRARY

The library of the institution, one of the best in technical resources, is maintained for use of the students and faculty. The library has a carefully-selected collection of catalogued books and pamphlets, and receives many periodicals in the technical field. Students are encouraged to use the library for reference and study. The librarian will be happy to assist the student in locating any research materials. The library will be open from 8:30 a.m.-4:00 p.m.; 6:30 p.m.-9:00 p.m.

ACADEMIC INFORMATION

Quality Point System
Graduation Requirements — Honors
Academic Deficiency — Attendance Policy
Attendance — Transfer of Credits
Student's Responsibility for Securing Special Help
Suspension and Dismissal
Withdrawing from School



ACADEMIC INFORMATION

QUALITY POINT SYSTEM

The Technical Institute of Alamance operates on a quality point system. In the computation of a student's average, one quarter hour of work passed with a grade of A, B, C, D, or F is given a numerical value of 4, 3, 2, 1, 0 respectively, which is then multiplied by the number of quarter hours represented by the course. The resulting product is the number of quality points earned for the course with the grade received.

The scholastic point average is determined by dividing the total quality points earned in all courses by the total number of quarter credit hours scheduled, including any courses failed.

GRADE		GRADE POINT EQUIVALENT
A—Excellent	93-100	4 quality points for each credit hour
B—Good	86-92	3 quality points for each credit hour
C—Fair	78-85	2 quality points for each credit hour
D—Passing	70-77	1 quality point for each credit hour
F—Failure	Below 70	0 quality points for each credit hour

I—Incomplete. This signifies that the student is incomplete in some report or other work assigned by his instructor or that he has an excused absence for the final examination, which will be given him at some other date but is otherwise passing. An "I" must be completed satisfactorily during the first two weeks of the next quarter or it automatically becomes an "F".

W—Withdrawn. This signifies that the student has withdrawn during the first three weeks of the quarter.

WP—Withdrawn Passing. This signifies that the student has withdrawn from a course voluntarily with a passing grade during the fourth through the ninth week of the quarter.

WF—Withdrawn Failing. This signifies that the student has withdrawn from a course with a failing grade during the fourth through the ninth week of the quarter. Failure penalty is incurred in the same manner as for grade of "F".

F—Failure. This signifies that the student withdrew from a course with a failing grade during the tenth through the twelfth week, or failed the entire course. Unique cases may be reviewed by the Administration.

All final course grades will be a letter grade in accordance with the adopted grading system. Students will receive reports at the end of each quarter.

GRADUATION REQUIREMENTS

Requirements for the degree or diploma will vary according to curriculum. The student should refer to the catalog or brochure which applies to his program so that he can determine the course requirements for graduation. All students must have a grade point average of 2.0 (C average) to be eligible for graduation.

HONORS

Graduating students who earn a quality point average of 3.5 during their course of work will receive a degree or diploma with honors.

ACADEMIC DEFICIENCY

Any student whose quality point average for any given quarter's work falls below a mean of 2.0 will be placed on the academic deficiency list. If his subsequent quarter's work should also fail to meet this minimum, he may be requested to withdraw from school or drop certain courses and/or take remedial work.

ATTENDANCE POLICY

The nature of the program at the Technical Institute of Alamance is such that it is necessary that students be in attendance regularly without interruptions due to absences.

Absences both excused and unexcused will be handled by the instructors and unusual cases will be reviewed by the Director of Student Personnel. Absences may be excused for the following reasons: (1) personal illness (2) personal injury (3) death in immediate family.

See the student handbook for additional information on attendance.

TRANSFER OF CREDITS

Transfer of credits accepted from other institutions are subject to action of the Admissions Committee.

STUDENTS' RESPONSIBILITY FOR SECURING SPECIAL HELP

It is the student's responsibility to seek out extra help if needed. Instructors are available for conferences but will not require that a person come in for extra help. In all cases, an instructor will be more than willing to help, but it is up to the individual student to ask.

SUSPENSION AND DISMISSAL

Students will be expected to conduct themselves at all times as individuals of prudence and maturity. The rights and feelings of others will be respected. Students shall demonstrate a high regard for school facilities and property and for the personal property of others.

School regulations which serve to control such activities as vehicular traffic and parking, smoking, and other aspects of personal conduct must be observed. Students may be suspended or dismissed for conduct which is considered incompatible with standards of propriety and good judgment.

Re-admittance of dismissed students at a subsequent session will be at the discretion of the President. Students may appeal a suspension or dismissal decision by letter to the Board of Trustees via the President.

WITHDRAWING FROM SCHOOL

If a student wishes to withdraw for any reason, he should first discuss it with his major instructor; second, report his decision to the Director of

Student Personnel; third, obtain a clearance form that will be signed by each subject instructor, including the librarian and the general office. The failure to do this may result in the withholding of all information in the student's file by the Director of Student Personnel.

COURSE NUMBERING SYSTEM

The following system established by the Department of Community Colleges is used in designating the courses offered by the Institute.

1. Each course is indicated by a three-letter prefix designating the general subject area. The prefix for technical courses will be preceded by the letter "T".
2. A number follows the letter prefix to indicate a specific course within an area according to the following rules:

    Vocational courses are assigned numbers within the range of 1000 to 2000.

    Technical courses are assigned numbers within the range of 100 to 300.

    Adult Education courses beyond the high school level are assigned numbers within the range of 2000 to 3000.

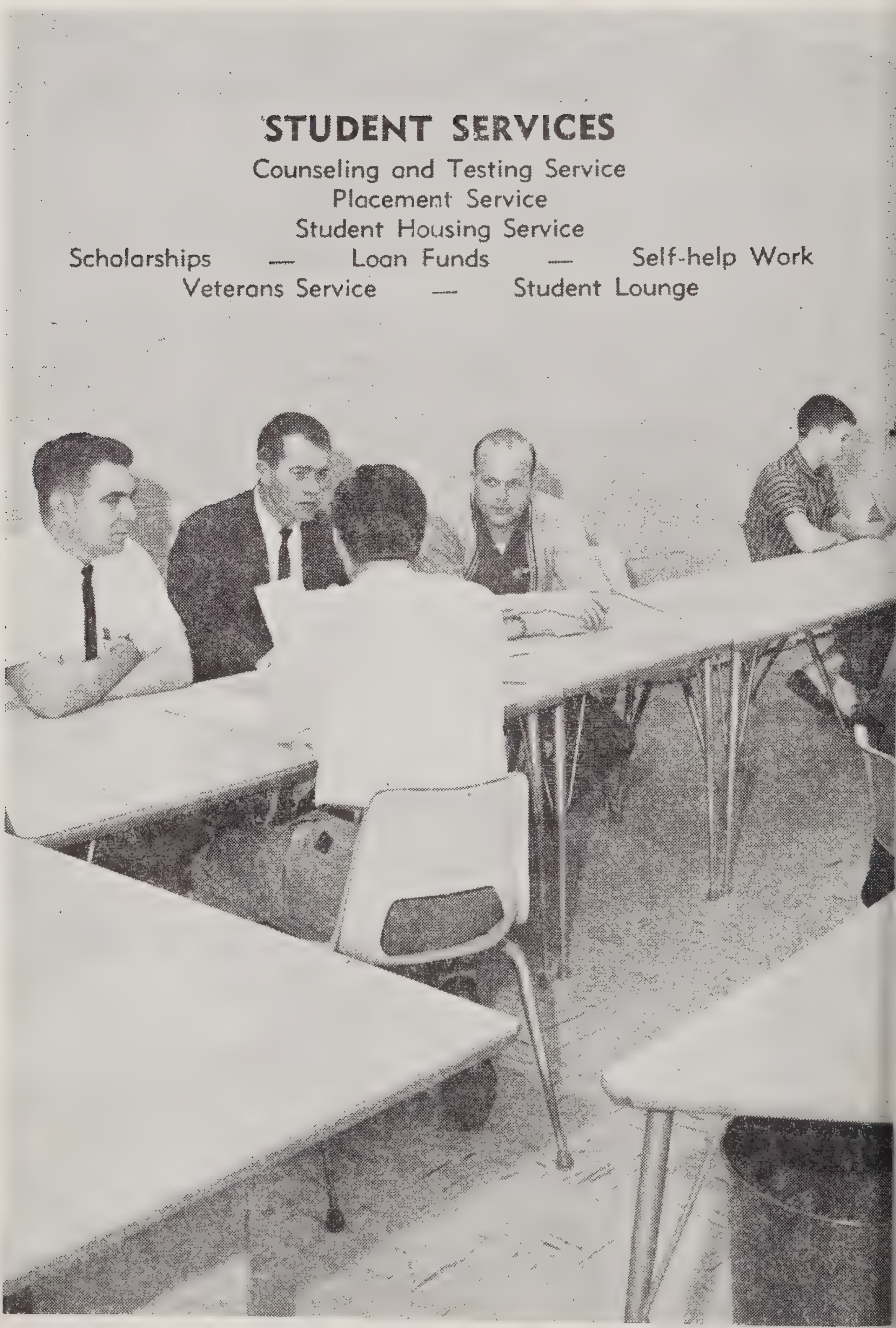
    Special courses developed by the Institute for curriculum programs will be indicated by the letter "S" following an appropriate prefix and number chosen according to the above rules.

THE FOLLOWING IS A LIST OF THE ABBREVIATIONS USED AS PREFIXES:

AHR	Air Conditioning, Heating & Refrigeration
ART	Art
AUT	Automotive
BUS	Business
CHM	Chemistry
CAT	Commercial Art
DEN	Dental
DFT	Drafting and Design
ECO	Economics
ELC	Electrical
EDP	Electronic Data Processing
ELN	Electronics
ENG	English
ISC	Industrial Science
MAT	Mathematics
MEC	Mechanical
NUR	Nursing
PHI	Philosophy
PHY	Physics
PME	Power Mechanics
POL	Political Science
PSY	Psychology
SOC	Sociology
SSC	Social Science
WLD	Welding

STUDENT SERVICES

Counseling and Testing Service
Placement Service
Student Housing Service
Scholarships — Loan Funds — Self-help Work
Veterans Service — Student Lounge



STUDENT SERVICES

A major aim of the Technical Institute of Alamance is to assist students in making maximum progress toward suitable achievement and establishing educational, vocational, personal, and social goals. In support of this aim, the Student Personnel services are organized to assist students in moving from one level of achievement to another.

Student Personnel Services include many forms of assistance to the individual through counseling, testing, orientation, placement, and follow-up. Various student affairs, such as housing, financial aid (including part-time work), the supervision of extra-curricular activities, and Student Council, are also included within the framework of the Student Personnel Services. The personnel program is designed to supplement institutional offerings by providing services to both the group and the individual. Attention is focused on self-understanding, personal growth, and assistance in achieving economic self-sufficiency in a job reasonably appropriate to abilities and satisfying to interests.

The direction of all student personnel work is committed to these purposes in a friendly atmosphere so that personal integrity and group morale will be preserved and enhanced.

COUNSELING AND TESTING SERVICE

Recognizing that every person is an individual and unique in aptitudes, personality, and ambition, a counseling service is provided for students who desire assistance with vocational, educational, and related matters. Individuals of the community are invited to seek this service if they desire to obtain assistance in the attainment of personal goals. Testing is provided at no cost to the student when information is desired and needed in aptitude, temperament, achievement, and vocational interest. Individuals are encouraged to avail themselves of these services.

PLACEMENT SERVICE

Information is available regarding trends of employment, data about salaries, and graduate students are assisted in contacts with employers. In addition, cooperative efforts are made with the Employment Security Commission in placement. The Student Personnel Office, however, does not guarantee employment. The objective of this service is to guide and assist the student and graduate in obtaining the type of position for which he is best qualified. Active contacts are maintained throughout North Carolina with industries. Many industries actively recruit at the institution and students are made aware of their presence so that contact can be afforded to the prospective employer.

STUDENT HOUSING SERVICE

The Institute does not have dormitory facilities; however, a current list of Burlington residents offering housing facilities may be obtained upon request. Costs will vary between $8 to $16 per week according to livability and convenience. The Institute staff will be happy to render limited assistance when possible in aiding to make adequate preparation for housing.

SCHOLARSHIPS

The Juliette A. Southard scholarship for Dental Assistants is given each year. Local interested civic organizations provide aid to worthy students. Information may be obtained from the office of the Director of Student Personnel.

LOAN FUNDS

The State Board of Education accepted a sizeable gift from the Consumer Finance Association at its May 2, 1963, meeting. This gift is the initial beginning of a loan fund now administered by the Department of Community Colleges. The maximum loan is $300 per year. Other loans are available for the purpose of assisting worthy students. Further information is available upon request from the Administration. The Technical Institute of Alamance is a participant in the College Foundation, Inc. loan programs. Two loan plans are available—the Banker's loan plan and the Bryan Foundation student loan plan.

The Bryan Foundation loan plan is available at the same rates as the Federal loans sponsored under the Higher Education Act: ¼ of 1% per year while in school and 3¼% during the repayment period.

Students must be accepted before application is made in either of these programs. Applications for loan funds may be obtained from the Student Personnel Services Office. Since there is time involved in processing of an application in either program, advanced planning should be made.

SELF-HELP WORK

Part-time jobs are available for students wishing to earn a part of their expenses. Students interested in part-time work should contact the Director of Student Personnel for information both for jobs within the institution and outside the institution. Each student in need is urged to avail himself of these opportunities for financial assistance during his education program.

VETERANS SERVICE

The Technical Institute of Alamance is approved by the Veterans Administration to offer education to veterans and war orphans. Qualified veterans who are admitted for instruction may be approved upon presentation of the Certificate of Eligibility issued by the Veterans Administration. Veterans are urged to take advantage of the guidance service and educational facilities of the Institute. The Institute is approved for training of veterans under all applicable laws.

Due to recent changes in the regulations of the Veterans Administration on eligibility for education, veterans are urged to consult their local Veterans Administration representative on personal eligibility at least a month before planning to enter the Institute.

STUDENT LOUNGE

A refreshment and lounge area equipped with a variety of modern vending machines is provided for the convenience of students and faculty. Foods and drinks may not be taken out of the lounge.

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

ASSOCIATE DEGREE PROGRAMS

(TWO YEARS)

ADMISSION REQUIREMENTS—ASSOCIATE DEGREE PROGRAMS

MINIMUM ADMISSION REQUIREMENTS

Requirements for admission of a candidate to the two-year associate degree programs include the following qualifications. The candidate:

1. Must be a high school graduate or have a State-approved equivalent education.
2. Must submit the transcripts of high school and post-high school education.
3. Must demonstrate aptitude for desired training as determined by standard tests. These tests will aid in student selection, placement, and guidance. Institution guidance and counseling will be available to the student throughout his education, not just at the time of his enrollment.
4. Must be in acceptable condition of physical and mental health. Medical examination may be required at the discretion of the administration.
5. Must have an interview with a designated representative for discussing enrollment plans and lifetime career goals.

In addition to the above minimum admission requirements, more specific prerequisites are necessary in some programs.

Two units of mathematics. one of which is in Algebra and the other in Plane Geometry or an equivalent in modern mathematics, are required in the following programs:

Air-Conditioning-Refrig.

Chemistry

Data Processing

Drafting & Design

Electronics

Manufacturing

It is suggested that students should have completed one unit of physical science with laboratory.

Facilities are available at the Institute for removal of academic deficiencies.

BUSINESS ADMINISTRATION

INTRODUCTION

PURPOSE OF CURRICULUM

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this State, business has become more competitive and automated. Better opportunities in business will be filled by students with specialized education beyond the high school level. The Business Administration Curriculum is designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in many phases of administrative work that might be encountered in the average business.

The specific objectives of the Business Administrative Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding our economy through study and analysis of the role of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.
4. Understanding and skill in effective communication for business.
5. Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

Job Description

The graduate of the Business Administration Curriculum may enter a variety of career opportunities from beginning sales person or office clerk to manager trainee. The duties and responsibilities of this graduate vary in different firms. These encompassments might include: making up and filing reports, tabulating and posting data in various books, sending out bills, checking calculations, adjusting complaints, operating various office machines, and assisting managers in supervising. Positions are available in businesses such as advertising; banking; credit; finance; retailing; wholesaling; hotel, tourist, and travel industry; insurance; transportation and communications.

BUSINESS ADMINISTRATION

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-BUS 102 Typewriting (or Elective)	2	3*	3
T-MAT 110 Business Mathematics	5	0	5
T-BUS 101 Introduction to Business	5	0	5
T-ECO 102 Economics	3	0	3
	18	3	19

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-BUS 120 Accounting	5	2	6
T-ECO 104 Economics	3	0	3
T-BUS 115 Business Law	3	0	3
T-BUS 123 Business Finance	3	0	3
	17	2	18

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-BUS 124 Business Finance	3	0	3
T-BUS 110 Office Machines	2	2	3
T-BUS 121 Accounting	5	2	6
T-BUS 116 Business Law	3	0	3
	16	4	18

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-BUS 232 Sales Development	3	0	3
T-EDP 104 Introduction to Data Processing Systems	3	2	4
T-BUS 239 Marketing	5	0	5
Elective	3	0	3
	17	2	18

Fifth Quarter	C	L	CH
T-ENG 206 Business Communication	3	0	3
Social Science Elective	3	0	3
T-BUS 243 Advertising	3	2	4
T-BUS 235 Business Management	3	0	3
Elective	3	0	3
	15	2	16

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-BUS 229 Taxes	3	2	4
T-BUS 272 Principles of Supervision	3	0	3
T-BUS 271 Office Management	3	0	3
Elective	6	0	6
	18	2	19

Total Quarter Hours in Courses	96
Electives (Min.)	12
	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

Electives for the Business Administration Curriculum may be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

BUSINESS ADMINISTRATION

COURSE TITLE	C	L	CH
T-BUS 247 Business Insurance	3	0	3
T-BUS 219 Credit Procedures and Problems	3	0	3
T-BUS 255 Interpreting Accounting Records	3	0	3
T-BUS 233 Personnel Management	3	0	3
T-BUS 245 Retailing	3	0	3
T-BUS 237 Wholesaling	3	0	3
T-BUS 266 Budget and Record Keeping	3	0	3
T-BUS 217 Business Law	3	0	3
T-BUS 300S Current Trends in Business	6	0	6

SOCIAL SCIENCE

	HOURS		
	C	L	Cr
T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3
T-PSY 206 Applied Psychology	3	0	3

Chapel Hill High School Library

ELECTRONIC DATA PROCESSING TECHNOLOGY—BUSINESS

INTRODUCTION

PURPOSE OF CURRICULUM

The processing of data by electronic equipment has created vast changes in business and industry. Nowhere are these changes more apparent than in the occupations associated with the handling of business information. Much of the routine and time-consuming work of obtaining, compiling and reporting the information necessary for a business to operate can now be adapted to machine processing.

This curriculum is designed to give the student (1) an understanding of the principles of business operation, (2) experience with techniques and handling business data, and (3) functional competence in the application of data processing systems, and experience in computer programming of business records and accounts, inventory, sales, and income and expenditures essential to business and to management decisions.

Emphasis is upon business data processing and use of machines in solving business problems.

Job Description

The business data processing specialist applies currently available programming techniques to a defined problem with minimum supervision. He analyzes and defines systems requirements to develop a program for electronic data processing; conducts detailed analyses of systems requirements, and develops all levels of block diagrams and logical flow charts. Translates program details into coded instructions; establishes test data; tests, refines, and revises program and documents the procedures. Ascertains if other combinations of instructions would achieve greater flexibility, better machine utilization, or more dependable results. He may prepare a complete set of operating instructions for use by a console operator; on occasion, operates the console in processing program.

ELECTRONIC DATA PROCESSING—BUSINESS

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-MAT 101 Technical Mathematics	5	0	5
T-MAT 121 Numbering System and Boolean Algebra	4	0	4
T-EDP 101 Functional Wiring Principles	2	3*	3
T-EDP 104 Introduction to Data Processing Systems	3	2	4
	17	5	19

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-MAT 102 Technical Mathematics	5	0	5
T-EDP 106 Business Programming	2	4	4
T-EDP 102 Functional Wiring Principles	2	3*	3
T-BUS 120 Accounting	5	2	6
	17	9	21

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-EDP 108 Scientific Programming	2	4	4
T-MAT 103 Technical Mathematics	5	0	5
T-MAT 214 Statistics	5	0	5
	15	4	17

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-EDP 202 Programming System Techniques	3	4	5
T-BUS 121 Accounting	5	2	6
T-BUS 110 Office Machines	2	2	3
	13	8	17

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-EDP 205 Linear Programming & Critical Path Method	2	4	4
T-BUS 225 Cost Accounting	3	2	4
T-BUS 115 Business Law	3	0	3
T-BUS 235 Business Management	3	0	3
	14	6	17

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-EDP 216 Research Project	1	8	5
T-BUS 116 Business Law	3	0	3
Elective	6	0	6
	13	8	17

Total Quarter Hours in Courses	102
Electives (Min.)	6
Total	108

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

Electives for the **Electronic Data Processing Technology-Business Curriculum** will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

ELECTRONIC DATA PROCESSING TECHNOLOGY—BUSINESS

COURSE TITLE	HOURS C	L	Cr
T-MAT 215 Statistics	5	0	5
T-EDP 219 Systems and Procedures	3	4	5
T-EDP 211 Procedures and Techniques of Automated Design	4	4	6
T-EDP 208 Advance Programming Techniques	2	6	5

SOCIAL SCIENCE

T-SSC 201 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

ELECTRONIC DATA PROCESSING TECHNOLOGY—SCIENTIFIC

INTRODUCTION

PURPOSE OF CURRICULUM

The processing of data by electronic equipment has created vast changes in scientific research and industry. The curriculum of Electronic Data Processing Technology—Scientific is designed, especially in the second year, to assist students in preparing for the new techniques and stresses mathematics in each of the six quarters of work. The program provides graduates qualified to:

1. Apply currently available programming techniques to a defined problem with minimum supervision.

2. Program and operate any computer with a minimum of orientation.

3. Understand and master special techniques as the need occurs.

4. Communicate their properly documented programming decisions to personnel concerned.

Emphasis in the second year of the curriculum is upon scientific data processing. Machines are used in the solution of research, production and engineering problems.

Students learn calculus, numerical analysis, theory of probability and statistics.

Job Description

The scientific data processing specialist analyzes and defines requirements to develop program for electronic data processing; conducts detailed analyses of systems requirements, and develops all levels of block diagrams and logical flow charts; translates program details into coded instructions; develops and prepares plans; establishes test data; tests, refines, and revises program. Evaluates and modifies existing programs as procedures or content of reports change.

ELECTRONIC DATA PROCESSING—SCIENTIFIC

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-MAT 101 Technical Mathematics	5	0	5
T-MAT 121 Numbering System and Boolean Algebra	4	0	4
T-EDP 101 Functional Wiring Principles	2	3*	3
T-EDP 104 Introduction to Data Processing Systems	3	2	4
	17	5	19

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-MAT 102 Technical Mathematics	5	0	5
T-EDP 106 Business Programming	2	4	4
T-EDP 102 Functional Wiring Principles	2	3*	3
T-BUS 120 Accounting	5	2	6
	17	9	21

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-EDP 108 Scientific Programming	2	4	4
T-MAT 103 Technical Mathematics	5	0	5
T-MAT 214 Statistics	5	0	5
	15	4	17

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-EDP 202 Programming System Techniques	3	4	5
T-MAT 201 Technical Mathematics	5	0	5
T-PHY 101 Physics: Properties of Matter	3	2	4
	14	6	17

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-EDP 205 Linear Programming and Critical Path Method	2	4	4
T-PHY 102 Physics: Work, Energy, Power	3	2	4
T-MAT 225 Numerical Analysis	5	0	5
	13	6	16

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-EDP 216 Research Project	1	8	5
T-PHY 103 Physics: Electricity	3	2	4
Elective	6	0	6
	13	10	18

Total Quarter Hours in Courses	102
Electives (Min.)	6
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Electronic Data Processing Technology—Scientific Curriculum** will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

ELECTRONIC DATA PROCESSING TECHNOLOGY—SCIENTIFIC

	HOURS C	L	Cr
T-CHM 101 Chemistry	4	2	5
T-CHM 102 Chemistry	4	2	5
T-MAT 215 Statistics	5	0	5
T-MAT 219 Differential Equations	5	0	5
T-EDP 208 Advance Programming Techniques	2	6	5

SOCIAL SCIENCE

T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

SECRETARIAL—ENGINEERING AND TECHNICAL

INTRODUCTION

PURPOSE OF CURRICULUM

The Engineering and Technical Secretary Curriculum is designed to prepare a student for a position in the office of a firm dealing in research, development and production in the scientific fields. The curriculum offers students the necessary secretarial skills and the required background of understanding and appreciation of the scientific method, the beginnings of a technical vocabulary and a feeling of respect for accuracy that will be essential in later work in the field.

Job Description

Graduates of this program may qualify for employment as stenographer-secretaries, technical secretaries, and possibly as private secretaries. They are in demand where engineers and other technical personnel find a need for secretarial help who can understand the specialized language of Electrical, Mechanical, Civil, or Chemical Engineers. The duties of an engineering and technical secretary may consist of taking dictation and transcribing letters, memoranda and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments. Graduates of this program, since they have received a background of science and engineering terminology in addition to their business background, are admirably prepared to work with engineering reports, records and correspondence.

SECRETARIAL—ENGINEERING AND TECHNICAL

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-BUS 102 Typewriting	2	3*	3
T-MAT 110 Business Mathematics	5	0	5
T-BUS 101 Introduction to Business	5	0	5
T-BUS 106 Shorthand	3	2	4
	18	5	20

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-BUS 103 Typewriting	2	3*	3
T-BUS 107 Shorthand	3	2	4
T-BUS 120 Accounting	5	2	6
T-BUS 115 Business Law	3	0	3
	16	7	19

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-BUS 104 Typewriting	2	3*	3
T-BUS 108 Shorthand	3	2	4
T-BUS 110 Office Machines	2	2	3
T-BUS 112 Filing	3	0	3
T-BUS 183T Terminology and Vocabulary (Technical)	3	0	3
	16	7	19

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-BUS 206T Dictation and Transcription (Technical)	3	2	4
T-BUS 205 Advanced Typewriting	2	3*	3
T-BUS 211 Office Machines	2	2	3
T-EDP 104 Introduction to Data Processing Systems	3	2	4
	13	9	17

Fifth Quarter	C	L	CH
T-ENG 206 Business Communication	3	0	3
T-BUS 207T Dictation and Transcription (Technical)	3	2	4
T-BUS 214 Secretarial Procedures	3	2	4
Social Science Elective	3	0	3
Elective	3	0	3
	15	4	17

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-BUS 208T Dictation and Transcription (Technical)	3	2	4
T-BUS 271 Office Management	3	0	3
Elective	6	0	6
	15	2	16

Total Quarter Hours in Courses	99
Electives (Min.)	9
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Engineering and Technical Secretarial Curriculum** may be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

SECRETARIAL—ENGINEERING AND TECHNICAL

	HOURS		
	C	L	Cr
T-PSY 112 Personality Development	3	0	3
T-BUS 121 Accounting	5	2	6
T-ECO 102 Economics	3	0	3
T-BUS 215T Office Application	6	0	6
T-ECO 108 Consumer Economics	3	0	3
T-BUS 116 Business Law	3	0	3

SOCIAL SCIENCE

	HOURS		
	C	L	Cr
T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

SECRETARIAL—MEDICAL

INTRODUCTION

PURPOSE OF CURRICULUM

The demand for better qualified medical secretaries in our ever-expanding medical profession is becoming more acute. The purpose of this curriculum is to outline a training program that will provide specialized training in the accepted procedures required by the medical profession, and to enable persons to become proficient soon after accepting employment in the medical and health occupations.

The Medical Secretary Curriculum is designed to offer the students the necessary secretarial skills in typing, dictation, transcription, and terminology for employment in the medical profession. The special training in secretarial subjects is supplemented by related courses in mathematics, accounting, business law, and personality development.

Job Description

The graduate of the Medical Secretary Curriculum should have a knowledge of medical terminology, skill in dictation and accurate transcription of medical records, reports and letters. The duties of a medical secretary may consist of: taking dictation and transcribing letters, memoranda and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments. The graduate may enter a secretarial position in a variety of offices such as physicians', private and public hospitals, federal and state health programs, and the drug and pharmaceutical industry.

SECRETARIAL—MEDICAL

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-BUS 102 Typewriting	2	3*	3
T-MAT 110 Business Mathematics	5	0	5
T-BUS 101 Introduction to Business	5	0	5
T-BUS 106 Shorthand	3	2	4
	18	5	20

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-BUS 103 Typewriting	2	3*	3
T-BUS 107 Shorthand	3	2	4
T-BUS 120 Accounting	5	2	6
T-BUS 115 Business Law	3	0	3
	16	7	19

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-BUS 104 Typewriting	2	3*	3
T-BUS 108 Shorthand	3	2	4
T-BUS 110 Office Machines	2	2	3
T-BUS 112 Filing	3	0	3
T-BUS 183M Terminology and Vocabulary (Medical)	3	0	3
	16	7	19

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-BUS 206M Dictation and Transcription (Medical)	3	2	4
T-BUS 205 Advanced Typewriting	2	3*	3
T-BUS 211 Office Machines	2	2	3
T-EDP 104 Introduction to Data Processing Systems	3	2	4
T-BUS 284M Terminology and Vocabulary (Medical)	3	0	3
	16	9	20

Fifth Quarter	C	L	CH
T-ENG 206 Business Communication	3	0	3
T-BUS 207M Dictation and Transcription (Medical)	3	2	4
T-BUS 214 Secretarial Procedures	3	2	4
Social Science Elective	3	0	3
Elective	3	0	3
	15	4	17

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-BUS 208M Dictation and Transcription (Medical)	3	2	4
T-BUS 271 Office Management	3	0	3
Elective	3	0	3
	12	2	13

Total Quarter Hours in Courses	102
Electives (Min.)	6
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Medical Secretarial Curriculum** may be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

SECRETARIAL—MEDICAL

	HOURS C	L	Cr
T-BUS 121 Accounting	5	2	6
T-BUS 215M Office Application	6	0	6
T-ECO 108 Consumer Economics	3	0	3
T-ECO 102 Economics	3	0	3
T-PSY 112 Personality Development	3	0	3
T-BUS 116 Business Law	3	0	3

SOCIAL SCIENCE

T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

TRAFFIC AND TRANSPORTATION

INTRODUCTION

PURPOSE OF CURRICULUM

North Carolina, in its tremendous industrial growth, has a need for more highly trained and skilled personnel in the traffic and transportation industry. The purpose of this curriculum is to provide training in new techniques, and an understanding of the latest State and Federal regulations applicable to traffic and transportation, which should enable the student to accept employment in a higher-level job in the industry.

The specific objectives of the Traffic and Transportation Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations and the traffic and transportation industry.
2. Understanding and skill in effective communication for business.
3. Understanding of the Interstate Commerce Act and related acts as they apply to traffic and transportation.
4. Understanding the role traffic and transportation plays in the expanding business economy.

Job Description

The graduate of this curriculum may seek career opportunities in the traffic and transportation industry as traffic representative, claims representative, dispatcher, rate analyst, and operational supervisor. A traffic representative is responsible for calling on the shipping public and selling the services of his respective company for their use. A claims representative renders and investigates claims for losses, shortages, damages, or overcharges on shipments of merchandise and adjust claims. The dispatcher is responsible for dispatching men or equipment to prevent or rectify disruptions in service in all departments of a transportation system. The rate specialist determines rates, routes, and classifications applicable to merchandise or material shipped or received by common carrier. The responsibilities of the operational supervisor include the supervision of those activities that will assure the smooth and constant flow of the traffic through the terminal area. This training, with additional experience, should qualify the student for positions as claims manager, operational manager, and managers of transportation terminals.

TRAFFIC AND TRANSPORTATION

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-BUS 102 Typewriting (Or Elective)	2	3*	3
T-MAT 110 Business Mathematics	5	0	5
T-BUS 101 Introduction to Business	5	0	5
T-ECO 102 Economics	3	0	3
	18	3	19

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-BUS 120 Accounting	5	2	6
T-ECO 104 Economics	3	0	3
T-BUS 115 Business Law	3	0	3
T-BUS 178 Traffic and Transportation	3	0	3
	17	2	18

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-BUS 121 Accounting	5	2	6
T-BUS 116 Business Law	3	0	3
T-BUS 179 Traffic and Transportation	3	0	3
T-ECO 106 Economics of Transportation	3	0	3
	17	2	18

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-BUS 280 Traffic and Transportation	3	0	3
T-BUS 290 Motor Carrier	3	0	3
T-BUS 285 ICC Law	3	0	3
T-BUS 232 Sales Development	3	0	3
Elective	3	0	3
	18	0	18

Fifth Quarter	C	L	CH
T-ENG 206 Business Communication	3	0	3
Social Science Elective	3	0	3
T-BUS 281 Traffic and Transportation	3	0	3
T-BUS 286 ICC Law	3	0	3
T-BUS 291 Motor Carrier	3	0	3
Elective	3	0	3
	18	0	18

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-BUS 295 Traffic Claims	3	0	3
T-BUS 299 Traffic Management	3	0	3
T-BUS 287 ICC Law	3	0	3
Elective	5	0	5
	17	0	17
Total Quarter Hours in Courses			97
Electives (Min.)			11
Total			108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Traffic and Transportation Curriculum** will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

TRAFFIC AND TRANSPORTATION

	HOURS		
	C	L	Cr
T-BUS 298 Material Handling	3	0	3
T-BUS 110 Office Machines	2	2	3
T-BUS 229 Taxes	3	2	4
T-BUS 272 Principles of Supervision	3	0	3

SOCIAL SCIENCE

T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

AIR CONDITIONING AND REFRIGERATION

INTRODUCTION

PURPOSE OF CURRICULUM

In recent years the use of air-conditioning and refrigeration equipment has increased tremendously. Practically all new building construction for business and commercial use have "year-round" air-conditioning systems. Many homes now have air conditioning and the trend is toward greater use of "year-round" systems for cooling and heating. Transportation systems and food industries are requiring greater use of refrigeration systems for transit, storage and display of products. With this great upswing in the use of air-conditioning and refrigeration equipment, a greater demand is made on trained personnel to plan and supervise installations and to supervise the operation and maintenance of this equipment.

The curriculum is designed to prepare the student to assist in planning, installing, operating and maintaining air conditioning equipment. The required technical information is presented and related skills are developed which will enable the graduate to function efficiently when working with engineers, systems designers, skilled craftsmen, salesmen, and others in the field. Considerable emphasis is placed on self-development in an effort to encourage the graduate to continue to study and grow as the industry advances.

Job Description

The air conditioning and refrigeration technician may be employed in areas of sales, installation, maintenance, production drafting, systems design, or as a research engineering assistant. He is involved with equipment for regulating temperature and humidity. He works with control systems, ducts and piping for distribution of air, water, steam, and refrigerants. His duties may be concerned with any or all of these systems and components.

AIR CONDITIONING AND REFRIGERATION

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-MAT 101 Technical Mathematics	5	0	5
T-PHY 101 Physics: Properties of Matter	3	2	4
T-DFT 101 Technical Drafting	0	6*	2
T-AHR 101 Fundamentals of Refrigeration I	4	3*	5
	15	11	19

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
TM-AT 102 Technical Mathematics	5	0	5
T-PHY 102 Physics: Work, Energy, Power	3	2	4
T-DFT 102 Technical Drafting	0	6*	2
T-AHR 102 Fundamentals of Refrigeration II	3	6*	5
	14	14	19

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-MAT 103 Technical Mathematics	5	0	5
T-PHY 103 Physics: Electricity	3	2	4
T-AHR 103 Commercial Refrigeration Systems Designs	3	6*	5
	14	8	17

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-DFT 204 Description Geometry	2	4	4
T-PHY 231 Fluid Mechanics	3	0	3
T-AHR 201 Heating Principles	3	4	5
T-AHR 216 Circuits & Controls I	3	3*	4
	14	11	19

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-AHR 203 Air Conditioning Principles	5	6*	7
T-DFT 226 Air Conditioning Systems Drawing	0	6*	2
Elective			4
	8	12	16

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-AHR 209 Air Conditioning Systems Design	5	6*	7
T-AHR 227 Estimating & Contracts	3	6*	5
Elective			3
	11	12	18

Total Quarter Hours in Courses	101
Electives (Min.)	7
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Air Conditioning and Refrigeration Curriculum** will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

AIR CONDITIONING AND REFRIGERATION

	HOURS		
	C	L	Cr
T-AHR 217 Circuits and Controls II	3	3	4
T-AHR 230 Seminar and Research	1	4	3
T-AHR 210 Installation and Design Problems	2	6	4
T-AHR 202 Fuels and Burners	2	3	3
T-SSC 201 Social Science I	3	0	3
T-SSC 202 Social Science II	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3
T-SOC 207 Rural Society	3	0	3
T-ISC 201 Industrial Organization and Management	3	0	3

CHEMICAL

INTRODUCTION

PURPOSE OF CURRICULUM

This curriculum guide provides a program for instruction of students in the basic knowledges and skills involved in laboratory and plant operations of the chemical industry. Technical knowledge and laboratory techniques are emphasized and a relationship between the theoretical and practical maintained.

The curriculum is designed to prepare persons to serve in two distinct roles: (1) research assistant to a chemist in the laboratory; and (2) planning and production assistant to chemical engineers in converting the research chemist's discoveries into actual industrial production. Research laboratory assistants must be well grounded in chemical analysis, testing, and synthesis. Chemical production assistants must have command of a basic knowledge of chemical processing and ability to use main types of equipment and machinery for making chemical products.

This program will provide the basic theoretical knowledge that will enable an individual to become a skilled technician in a rather limited time.

Job Description

The chemical technician performs quantitative and qualitative chemical analyses of processes involved in a production situation. Tests samples of raw materials to determine that they are within specification limits required for manufacture of desired products. Analyzes samples of product intermediates at manufacturing steps so as to supply data to processing personnel by which they may control reactions involved, to determine whether processing is being performed according to plant specifications, and to solve current production problems. Analyzes samples of finished products to determine whether quality warrants its release for shipment, using analytical methods to determine percentages, such as acetone extract, heating loss, or ash content. Prepares laboratory test reports and checks analyses with specifications and consults with laboratory supervisors. Makes special analyses as necessary. May secure samples used.

CHEMICAL

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-MAT 101 Technical Mathematics	5	0	5
T-PHY 101 Physics: Properties of Matter	3	2	4
T-DFT 101 Technical Drafting	0	6*	2
T-CHM 111 General Chemistry	4	3*	5
	15	11	19

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-MAT 102 Technical Mathematics	5	0	5
T-PHY 102 Physics: Work, Energy, Power	3	2	4
T-DFT 102 Technical Drafting	0	6*	2
T-CHM 112 General Chemistry	4	3*	5
	15	11	19

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-MAT 103 Technical Mathematics	5	0	5
T-PHY 103 Physics: Electricity	3	2	4
T-CHM 121 Quantitative Chemical Analysis	3	6*	5
	14	8	17

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-CHM 222 Quantitative Chemical Analysis	2	9*	5
T-CHM 227 Physical Chemistry	3	2	4
Elective			5
	8	11	17

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-CHM 231 Organic Chemistry	3	6*	5
T-CHM 241 Industrial Chemical Analysis	3	9*	6
Elective			4
	9	15	18

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-CHM 232 Organic Chemistry	3	6*	5
T-CHM 242 Industrial Chemical Analysis	3	12*	7
Elective			3
	9	18	18

Total Quarter Hours in Courses	96
Electives	12
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week　L=Lab Hrs. Per Week　CH=Credit Hrs. Per Qtr.

Electives for the Chemical Technology Curriculum will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

CHEMICAL TECHNOLOGY

T-MEC 116 Engineering Materials	3	0	3
T-MAT 201 Technical Mathematics	5	0	5
T-MAT 219 Differential Equations	5	0	5
T-PHY 104 Physics: Light and Sound	3	2	4
T-PHY 231 Fluid Mechanics	3	0	3
T-CHM 250S Qualitative Inorganic Analysis	2	4	4

SOCIAL SCIENCE

T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3
T-ISC 201 Industrial Organization and Management	3	0	3

DRAFTING & DESIGN—MECHANICAL

INTRODUCTION

PURPOSE OF CURRICULUM

This curriculum guide was prepared for the purpose of outlining a training program for students of mechanical drafting and design technology. There are certain identifiable duties which are common to all technicians of this general classification and which comprise the basic areas of technical knowledge they need. This curriculum has been designed for training persons in the accepted performance of these basic duties that will be assigned, and to enable the individual student to become proficient in a short time after he becomes employed in the industry.

Courses in general education have been included to give a student the assurance and understanding that comes with education upon a broad base. The technician associates with many levels of thought and expression—administrative personnel, scientists, engineers, skilled workmen—and must be able to communicate effectively with all levels. Courses containing essential information from related subject areas, such as mathematics, physics, and mechanics have been included in order to provide the student a better academic base for his training. Emphasis is placed upon ability to think and plan, as well as drafting procedures and techniques.

Job Description

Mechanical drafting and design technicians are concerned with the preparation of drawings for design proposals, for experimental models and items for production use.

These technicians perform many aspects of drafting in a specialized field, such as the developing of the drawing of a section, sub-assembly or major component. Investigating design factors and availability of material and equipment, production methods and facilities are frequent assignments. They assist in the design of units and controls from specifications by utilizing drawings of existing units and reports on functional performance. They may draw components in industrial fields based on engineers' original design concepts or specific ideas. Also, they may be assigned as coordinators for the execution of related work of other design, production, tooling, material and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings.

These technicians are employed in many types of manufacturing, fabrication, research development and service industries. Substantial numbers also are employed in communications, transportation, public utilities, consulting engineering firms, and federal, state, and local government.

DRAFTING & DESIGN—MECHANICAL

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-MAT 101 Technical Mathematics	5	0	5
T-PHY 101 Physics: Properties of Matter	3	2	4
T-DFT 101 Technical Drafting	0	6*	2
T-MEC 101 Machine Processes	0	6*	2
	11	14	16

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-MAT 102 Technical Mathematics	5	0	5
T-PHY 102 Physics: Work, Energy, Power	3	2	4
T-DFT 102 Technical Drafting	0	6*	2
T-MEC 102 Machine Processes	0	6*	2
	11	14	16

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-MAT 103 Technical Mathematics	5	0	5
T-PHY 103 Physics: Electricity	3	2	4
T-PHY 106 Applied Mechanics	5	0	5
T-DFT 103 Technical Drafting	0	6*	2
	16	8	19

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-DFT 201 Technical Drafting	2	6*	4
T-DFT 204 Descriptive Geometry	2	4	4
T-MEC 205 Strength of Materials	3	2	4
T-MEC 210 Physical Metallurgy	3	3*	4
	13	15	19

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-DFT 205 Design Drafting I	2	6*	4
T-DFT 211 Mechanisms	3	2	4
T-MEC 211 Physical Metallurgy	3	3*	4
Elective			4
	11	11	19

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-DFT 206 Design Drafting II	2	6*	4
T-MEC 235 Hydraulics & Pneumatics	3	3*	4
Elective			4
Elective			4
	8	9	12
Total Quarter Hours in Courses			96
Minimum Electives			12
Total			108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Drafting & Design—Mechanical Curriculum** will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

DRAFTING & DESIGN—MECHANICAL

	HOURS C	L	Cr
T-DFT 212 Jig and Fixture Design	2	6	4
T-ELN 201 Industrial Controls	3	2	4
T-ELC 201 Electrical Machinery	3	0	3
T-MEC 237 Control Systems	2	4	4
T-ISC 201 Industrial Organization and Management	3	0	3

SOCIAL SCIENCE

T-SSC 201 Social Science I	3	0	3
T-SSC 202 Social Science II	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

ELECTRONICS

INTRODUCTION

PURPOSE OF CURRICULUM

The field of electronics has developed at a rapid pace since the turn of the century. For many years the major concern of electronics was in the area of communications. Developments during World War II and in the period since have revolutionized production techniques. New industries have been established to supplement the need and demand for electronics equipment.

Many opportunities exist for men and women with a technical education in electronics. This curriculum provides a basic background in electronic related theory with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may take their place as an assistant to an engineer, or as a liaison between the engineer and the skilled craftsman.

Job Description

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance or sales. He may be an assistant to an engineer, an engineering aide, laboratory technician, supervisor or equipment specialist. His training is similar to that of an engineer, but in less depth and more practical in application. He can function as a liaison between an engineer and the skilled craftsman.

ELECTRONICS

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-MAT 101 Technical Mathematics	5	0	5
T-PHY 101 Physics: Properties of Matter	3	2	4
T-DFT 101 Technical Drafting	0	6*	2
T-ELC 101 Fundamentals of Electricity	4	4 or 6	6
	15	12 or 14	20

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-MAT 102 Technical Mathematics	5	0	5
T-PHY 102 Physics: Work, Energy, Power	3	2	4
T-DFT 102 Technical Drafting	0	6*	2
T-ELC 102 Fundamentals of Electricity	4	4 or 6	6
	15	12 or 14	20

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-MAT 103 Technical Mathematics	5	0	5
T-ELN 101 Electronic Instruments and Measurements	1	4 or 6	3
T-ELN 105 Control Devices	5	4 or 6	7
	14	8 or 12	18

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-MAT 201 Technical Mathematics	5	0	5
T-PHY 104 Physics: Light and Sound	3	2	4
T-ELN 205 Application of Vacuum Tubes and Transistors	5	4 or 6	7
	16	6 or 8	19

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-ELN 210 Semiconductor Circuit Analysis	5	2 or 3	6
T-ELN 214 Wave Shaping and Pulse Circuits	2	2 or 3	3
Elective			3
	10	4 or 6	15

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-ELN 215 Wave Shaping and Pulse Circuits	2	2 or 3	3
T-ELN 220 Electronic Systems	5	4 or 6	7
Elective			3
	10	6 or 9	16

Total Quarter Hours in Courses	102
Electives (Min.)	6
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Electronics Curriculum** will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

ELECTRONICS

	HOURS C	 L	 Cr
T-ELN 225 Transmission and Propagation	3	0	3
T-ELN 227 UHF and Microwave Systems	5	4	7
T-ELN 230 Television Systems	4	6	7
T-ELN 235 Industrial Instrumentation	4	6	7
T-ELN 240 Digital Computers	3	0	3
T-ELN 245 Electronic Design Project	0	4	2
T-ELC 210 Rotating Devices	2	2	3
T-CHM 101 Chemistry	4	2	5
T-EDP 104 Introduction to Electronic Data Processing Systems	3	2	4
T-MAT 208 Calculus and Laplace Transforms for Electronics	5	0	5
T-MEC 110 Fundamental Mechanisms	2	4	4

SOCIAL SCIENCE

	C	L	CH
T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

MANUFACTURING

INTRODUCTION

PURPOSE OF CURRICULUM

A primary objective of this program is the training of personnel to assist the engineer or small industry in planning, tooling, operating, servicing, and supervising manufacturing operations. Practically every branch of manufacturing and much research and design make use of the mechanical principles presented in this curriculum. With the increasing importance of automated production, quality control, and production scheduling techniques, the position of the technician in this field has become of primary importance. This curriculum provides basic background of mechanical and related theory with specific skills in the use of manufacturing and testing equipment. The students are given experience in operating and servicing machines accompanied by general education and management courses.

Job Description

A graduate of this program may qualify for an entry position in one of several manufacturing functions. Methods analysis, production scheduling, quality control, materials testing, plant layout, time study, machine tooling, maintenance, equipment and instrument work are typical of situations where the graduate may be able to function with a minimum of on-the-job training.

MANUFACTURING

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-MAT 101 Technical Mathematics	5	0	5
T-PHY 101 Physics: Properties of Matter	3	2	4
T-DFT 101 Technical Drafting	0	6*	2
T-MEC 101 Machine Processes	0	6*	2
	11	14	16

Second Quarter

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-MAT 102 Technical Mathematics	5	0	5
T-PHY 102 Physics: Work, Energy, Power	3	2	4
T-DFT 102 Technical Drafting	0	6*	2
T-MEC 102 Machine Processes	0	6*	2
	11	14	16

Third Quarter

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-MAT 103 Technical Mathematics	5	0	5
T-PHY 103 Physics: Electricity	3	2	4
T-PHY 106 Applied Mechanics	5	0	5
T-MEC 103 Machine Processes	0	6*	2
	16	8	19

Fourth Quarter

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communication	3	0	3
T-MEC 205 Strength of Materials	3	2	4
T-MEC 210 Physical Metallurgy	3	3*	4
T-MEC 213 Production Planning	3	3*	4
T-MEC 201 Machine Processes	2	6*	4
	14	14	19

Fifth Quarter

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-MEC 211 Physical Metallurgy	3	3*	4
T-DFT 211 Mechanisms	3	2	4
T-ISC 202 Quality Control	3	2	4
Elective			4
	12	7	19

Sixth Quarter

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-ISC 203 Motion Study	3	2	4
T-MEC 235 Hydraulics and Pneumatics	3	3*	4
Elective			4
Elective			4
	9	5	19

Total Quarter Hours in Courses	96
Electives (Min.)	12
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Electives for the **Manufacturing Curriculum** will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

MANUFACTURING

	HOURS		
	C	L	Cr
T-DFT 212 Jig and Fixture Design	2	6	4
T-MEC 212 Practical Automation	3	2	4
T-MEC 214 Tool Engineering	3	0	3
T-ELN 201 Industrial Controls	3	2	4
T-ELC 201 Electrical Machinery	3	0	3
T-CHM 101 Chemistry	4	2	5
T-MEC 237 Control Systems	2	4	4
T-ISC 204 Value Analysis	3	0	3
T-ISC 201 Industrial Organization and Management	3	0	3
T-ISC 209 Plant Layout	3	2	4

SOCIAL SCIENCE

T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

COMMERCIAL ART & ADVERTISING DESIGN

INTRODUCTION

PURPOSE OF CURRICULUM

Surveys have shown an increase in the demand for graduates possessing training in the field of Commercial Art and Advertising Design. This curriculum will prepare a graduate with a sound, well-rounded background for technical and creative achievement throughout his professional life. Design and illustration for commerce is continually advancing its standards, therefore, the background offered the student must be well-developed to prepare him for performance on a contemporary professional level. Graduates of this program will have an adequate background in illustration, layout and lettering, design, and production enabling them to be employed in some facet of Commercial Artistry.

Equipped with professional competence and the potential for continuing growth and improvement, graduates are qualified for employment in advertising agencies, design studios, department stores, industrial advertising departments, government agencies, newspapers, television studios, printing and publishing houses.

Job Description

The commercial artist or advertising designer creates and designs layouts and illustrations for printing, creates posters, signboards, billboards, and show cards. He may design and prepare charts, diagrams, sketches, and maps for publication and exhibition, perform responsible illustrative work for package design, photography, lettering, and art work for the printing processes. Opportunities for graduates of this program may be in advertising agencies, newspapers and magazines, television studios, industrial advertising departments and design studios, department stores, government agencies, or in printing and publishing houses.

COMMERCIAL ART & ADVERTISING DESIGN

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
T-ENG 101 Grammar	3	0	3
T-DFT 101 Technical Drafting	0	6*	2
T-CAT 101 Advertising Principles	3	0	3
T-CAT 105 Life Study	2	3*	3
T-CAT 121 Commercial Art and Advertising Design	3	9*	6
	11	18	17

Second Quarter	C	L	CH
T-ENG 102 Composition	3	0	3
T-DFT 102 Technical Drafting	0	6*	2
T-MAT 110 Business Mathematics	5	0	5
T-CAT 106 Life Study	0	6*	2
T-CAT 122 Commercial Art and Advertising Design	3	9*	6
	11	21	18

Third Quarter	C	L	CH
T-ENG 103 Report Writing	3	0	3
T-CAT 110 Industrial Illustration	2	6*	4
T-CAT 116 Photography	2	6*	4
T-CAT 123 Commercial Art and Advertising Design	3	9*	6
	10	21	17

Fourth Quarter	C	L	CH
T-ENG 204 Oral Communications	3	0	3
T-CAT 205 Advertising Copywriting	3	0	3
T-CAT 212 Advertising Illustration	1	3*	2
T-CAT 224 Commercial Art and Advertising Design	3	9*	6
Elective			4
	10	12	18

Fifth Quarter	C	L	CH
Social Science Elective	3	0	3
T-CAT 213 Advertising Illustration	1	3*	2
T-CAT 217 Photography	2	6*	4
T-CAT 225 Commercial Art and Advertising Design	3	9*	6
Elective			4
	9	18	19

Sixth Quarter	C	L	CH
Social Science Elective	3	0	3
T-CAT 214 Advertising Illustration	1	3*	2
T-CAT 226 Commercial Art and Advertising Design	3	9*	6
T-CAT 235 Advertising Art Direction	5	0	5
Elective			3
	12	12	19

Total Quarter Hours in Courses	97
Electives (Min.)	11
Total	108

*"Manipulative laboratory" involves development of skills and job proficiency. Credit of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr

Electives for the Commercial Art & Advertising Design Curriculum will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

COMMERCIAL ART & ADVERTISING DESIGN

	HOURS		
	C	L	Cr
T-ART 105 History of Art	3	0	3
T-BUS 232 Sales Development	3	0	3
T-CAT 231 Painting with Polymers	2	6	4
T-ENG 206 Business Communication	3	0	3
T-PSY 221 Psychology of Color	3	0	3
T-SSC 201 Social Science	3	0	3
T-SSC 202 Social Science	3	0	3
T-PSY 206 Applied Psychology	3	0	3
T-ECO 102 Economics	3	0	3
T-SSC 205 American Institutions	3	0	3
T-POL 201 United States Government	3	0	3

DIPLOMA PROGRAMS

VOCATIONAL PROGRAMS

(ONE-YEAR)

ADMISSION REQUIREMENTS—DIPLOMA PROGRAM

The following are minimum admission requirements to the regular one-year preparatory curriculums and vocational programs:

MINIMUM ADMISSION REQUIREMENTS

A candidate for admission to the regular trade-vocational training programs must meet the following qualifications:

1. Must be at least 18 years of age and have the ability to enter into or make advancement in the area in which enrolled.
2. Must have satisfactorily completed a minimum of eight (8) units of accredited secondary school work. Those who have not successfully completed eight (8) units of such work will be required to take other standard and/or local institution tests.
3. Must demonstrate aptitude for vocational training as determined by standard and/or local institution tests to insure ability to meet job requirements in the desired trade.
4. Must have a personal interview with designated school representative.
5. Must be in acceptable physical and mental health to meet qualifications for a given occupation.

In addition to the above minimum admission requirements, more specific pre-requisites are necessary in some programs.

For the Dental Assistant an essay on "Why I Want to Become A Dental Assistant" is required.

One unit of secondary school algebra or an equivalent in modern mathematics will be required in:

Machinist

Air Cond.

Auto Mechanics

Mech. Drafting

Radio & TV servicing

Facilities are available at the Institute for removal of academic deficiencies.

AIR CONDITIONING AND REFRIGERATION

INTRODUCTION

PURPOSE OF CURRICULUM

In recent years the use of air conditioning and refrigeration equipment has increased tremendously. Practically all new building construction for business and commercial use have "all year" comfort systems. Many homes now have air conditioning and the trend is toward greater use of "all year" systems of cooling and heating. The food industry is requiring greater use of refrigeration systems in freezing, storage, and display of products. With this great upswing in the use of air conditioning and refrigeration equipment, a greater demand is made on trained personnel to install, operate, maintain and service this equipment.

This curriculum is designed to give the students practical knowledge that will enable them to become capable service men in the industry. The principle objective has been to outline the required technical and related instruction to enable them to understand the basic principles involved in the construction, operation, and maintenance of equipment. Job opportunities exist with commercial companies that specialize in air conditioning, automatic heating, sheet metal and commercial refrigeration installation and service. The service man is employable in areas of sales, maintenance, installation and in the growing fields of truck and trailer refrigeration.

Job Description

The air conditioning and refrigeration mechanic installs, inspects, maintains, services and repairs domestic and commercial equipment. Connects motors, compressors, temperature controls, humidity controls, and circulating fans to control panels. Tests systems, observes pressure and vacuum gauges and adjusts controls to insure proper operation.

AIR CONDITIONING AND REFRIGERATION

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
AHR 1121 Principles of Refrigeration	3	12	7
MAT 1101 Fundamentals of Mathematics	5	0	5
ENG 1101 Reading Improvement	2	0	2
PHY 1101 Applied Science	3	2	4
DFT 1104 Blueprint Reading: Mechanical	0	3	1
	13	17	19

Second Quarter	C	L	CH
AHR 1122 Domestic and Commercial Refrigeration	3	9	6
MAT 1102 Algebra	5	0	5
ENG 1102 Communication Skills	3	0	3
ELC 1102 Applied Electricity	2	3	3
DFT 1116 Blueprint Reading: Air Conditioning	1	3	2
	14	15	19

Third Quarter	C	L	CH
AHR 1123 Principles of Air Conditioning	3	12	7
AHR 1128 Automatic Controls	3	6	5
PSY 1101 Human Relations	3	0	3
WLD 1101 Basic Gas Welding	0	3	1
	9	21	16

Fourth Quarter	C	L	CH
AHR 1124 Air Conditioning and Refrigeration Servicing	3	6	5
AHR 1126 All Year Comfort System	3	6	5
MEC 1120 Duct Construction and Maintenance	3	6	5
BUS 1103 Small Business Operations	3	0	3
	12	18	18

DENTAL ASSISTANT

INTRODUCTION

PURPOSE OF CURRICULUM

Dental assisting is one of the fastest growing occupations for women today. The role of the dental assistant has evolved from that of receptionist only to that of a fully participating member of the dental team; primary emphasis is on chairside assisting, although she continues to perform numerous duties related to office management, patient relations, and laboratory procedures. The dental profession now recognizes the contribution the dental assistant can make to the extension of services and increased productivity of the dental office. Projected needs call for a fivefold expansion in numbers of graduates and continued improvement in the quality of training programs.

The specific objectives of the Dental Assistant Curriculum are to develop the following competencies:

1. Understanding of the business procedures of the dental office.
2. Understanding of principles and beginning skill in the procedures of chairside assisting, including effective patient relationships.
3. Understanding of principles and beginning skills in performance of selected laboratory procedures commonly carried out in the dental office.

Job Description

The duties of the dental assistant vary somewhat, depending on the number of auxiliary workers employed. In some offices the assistant is responsible for all three areas described below; in others, she may be responsible for only one area.

In rendering chairside assistance to the dentist, the dental assistant is responsible for placing instruments for use, keeping the operating field clear during treatment, preparing restorative materials and dental cements, passing materials and instruments during dental procedures, and care of the operatory after use. She may take X-rays of the teeth and apply fluorides under the direction of the dentist. In the laboratory of the dental office, she may make models of the teeth and mouth, cast inlays and crowns, process exposed X-ray films and mount finished X-rays. In acting as office manager and receptionist, she receives patients, arranges appointments, records treatments, keeps accounts, maintains inventories, and orders supplies.

DENTAL ASSISTANT

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE First Quarter	C	L	CH
DEN 1001 Introduction to Dental Assisting	2	0	2
DEN 1002 Dental Materials	2	9	5
DEN 1003 Preclinical Sciences I	3	3	4
ENG 1102 Communication Skills	3	0	3
BUS 1102 Typewriting	2	3	3
	12	15	17

Second Quarter	C	L	CH
DEN 1004 Preclinical Sciences II	4	0	4
DEN 1005 Dental Accounting	3	2	4
DEN 1006 Clinical Procedures I	5	9	8
ENG 1103 Report Writing	3	0	3
	15	11	19

Third Quarter	C	L	CH
DEN 1007 Clinical Procedures II	5	6	7
DEN 1008 Dental Office Management	4	3	5
DEN 1009 Dental Office Practice I	0	12	4
T-PSY 112 Personality Development	3	0	3
T-PSY 1112 Personality Development	3	0	3
	12	21	19

Fourth Quarter	C	L	CH
DEN 1010 Dental Office Practice II	0	24	8
DEN 1011 Dental Assistant Seminar	1	0	1
PSY 1101 Human Relations	3	0	3
	4	24	12

PRACTICAL NURSING

INTRODUCTION

PURPOSE OF CURRICULUM

The accelerated growth of population in North Carolina and rapid advancement in medical technology demand an increased number of well-trained personnel for health services. Realizing this need, the North Carolina Department of Community Colleges, in conjunction with local hospitals, administers programs of practical nurse education throughout the state.

The aim of the Practical Nurse Education Program is to prepare qualified persons for participation in care of patients of all ages, in various states of dependency, and with a variety of illness conditions.

Students are selected on the basis of demonstrated aptitude for nursing, as determined by pre-entrance tests, interviews with faculty members, high school record, character references, and reports of medical and dental examinations.

Throughout the one-year program the student is expected to continuously acquire knowledge and understandings related to nursing and the biological and social sciences and to develop skills related to nursing practice, communications, inter-personal relations, and use of good judgment. Evaluation of student performance consists of tests on all phases of course content, evaluation of clinical performance, and evaluation of adjustment to the responsibilities of nursing. A passing score is required on all graded work, plus demonstrated progress in application of nursing skills to actual patient care.

Graduates of accredited programs of practical nurse education are eligible to take the licensing examinations given by the North Carolina Board of Nursing. This examination is given each year; usually in April and September. A passing score entitles the individual to receive a license and to use a legal title "Licensed Practical Nurse." The license must be renewed annually. The licensed Practical Nurse can apply for licensure in other states on the basis of a satisfactory examination score, without repeating the examination.

The Curriculum Design

The practical nursing curriculum is designed as a core curriculum (fused course content) with the focus on nursing elements; concepts and facts from other subject areas are presented as they relate to specific units of nursing. The purpose of this design is to facilitate student application of learnings to nursing practice, *i.e.*, to promote transfer of learning from related subjects to nursing theory and from classroom study to clinical application. Quarter hours of credit have not been assigned, in that this design does not lend itself to such an hourly and credit breakdown. Instead, the minimum contact hours needed for adequate coverage of course material is indicated for class and laboratory (including clinical) experiences; those weekly contact hours are approximate and are averages, as there is necessarily some variation from week to week, especially during the first quarter. It is the prerogative of the local institution, however, to allocate credit hours if this is desired for administrative purposes.

Organizing elements for the core curriculum include communications and human relations, as well as certain elements from nursing practice such as ethics, legal aspects, standards of practice, and role perception. If subjects such as English or Human Relations are to be required as separate courses, care must be taken to avoid deletion of nursing content. The allotted times provide for learning experiences with multiple objectives, to include communications and human relations skills as well as nursing skills. The addition of other courses, though justifiable in terms of educational standards for one-year programs, create the hazards of excessively heavy student load or omission of important nursing content.

Each Practical Nurse Education Program must necessarily make certain adaptations in the curriculum design, because of differences in institutional policies and because of the wide diversity in facilities utilized for the clinical phase of the programs. If administrative personnel or the practical nursing faculty prefer a subject-oriented curriculum, such an organizational plan can readily be prepared from teacher-made outlines or from the core curriculum course materials. In making adaptations, administrators and faculty members are cautioned to keep in mind that the core design incorporates sound educational principles: units are based on specific nursing content and relevant basic information from other subject areas, so that relationships are readily understood by the student; sequences are planned for definite progression from simple or familiar concepts to more complex and unfamiliar ones; and units progress from normal, to moderate deviations from normal, to serious deviations. The seven units of the first quarter are relatively fixed, with each building on preceding units to a great extent. Beginning in the second quarter, unit sequence is flexible and should be carefully planned by each teacher to adapt the instructional plan to the local situation. This planning, however, should result in a progression of units that will be conducive to effective learning.

Job Description

The LPN is prepared to function in a variety of situations: hospitals of all types, nursing homes, clinics, doctors' and dentists' offices and, in some localities, public health facilities. In all situations the LPN functions under supervision of a registered nurse and/or licensed physician. This supervision may be minimal in situations where the patient's condition is stable and not complex; or it may consist of continuous direction in situations requiring the knowledge and skills of the registered nurse or physician. In the latter situation, the LPN may function in an assisting role in order to avoid assuming responsibility beyond that for which the one-year program can prepare the individual.

Job requirements for the Licensed Practical Nurse include suitable personal characteristics, ability to adapt knowledge and understandings of nursing principles to a variety of situations, technical skills for performance of bedside nursing, appreciation for differences of people and for the worth of every individual, a desire to serve and help others, and readiness to conform to the requirements of nursing ethics and hospital policies.

PRACTICAL NURSING

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE	C*	L*	CH
First Quarter	**C***	**L***	**CH**
NUR 1001 Practical Nursing I	28	2	330
Second Quarter	**C***	**L***	**CH**
NUR 1002 Practical Nursing II	12	24	396
Third Quarter	**C***	**L***	**CH**
NUR 1003 Practical Nursing III	12	24	396
Fourth Quarter	**C***	**L***	**CH**
NUR 1004 Practical Nursing IV	12	24	396
Total			1518

*Figures given are averages, as there will be some variation from week to week.

DRAFTING—MECHANICAL

INTRODUCTION

PURPOSE OF CURRICULUM

This curriculum is designed to prepare students to enter the field of mechanical drafting. The first two quarters contain courses basic to all fields of drafting. The third and fourth quarters contain specialization and related courses that prepare one to enter mechanical drafting occupations.

Each course is prepared to enable an individual to advance rapidly in drafting proficiency upon entering the field of work. Courses are arranged in sequence to develop drafting skills and proficiency in mathematics and science. The draftsman associates with many levels of personnel—administrative, architects, engineers, skilled workmen—and must be able to communicate effectively with them. Courses to develop knowledge and skills in communication, human relations, economics and industrial organization are provided to assist the student in developing understandings and confidence in his relations with other persons.

Job Description

Draftsman prepares clear, complete, and accurate working plans and detail drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions: makes final sketch of the proposed drawing, checking dimension of parts, materials to be used, the relation of one part to another, and the relation of the various parts to the whole structure. Makes any adjustments or changes necessary or desired. Inks in lines and letters on pencil drawings as required. Exercises manual skill in the manipulation of triangle, T-square, and other drafting tools. Lays tracing paper on drawing and traces drawing in pencil or ink. Makes charts for representation of statistical data. Makes finished designs from sketches. Utilizes knowledge of various machines, engineering practices, mathematics, building materials, and other physical sciences to complete the drawings.

Mechanical draftsman performs the general duties of a draftsman and also specializes in making rough drafting sketches of proposed mechanical devices, and then drawing necessary details. Prepares accurate scale drawings of parts or machines from specifications.

DRAFTING—MECHANICAL

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
DFT 1121 Drafting	3	12	7
MAT 1103 Geometry	3	0	3
ENG 1101 Reading Improvement	2	0	2
PHY 1101 Applied Science	3	2	4
	11	14	16

Second Quarter	C	L	CH
DFT 1122 Drafting	3	6	5
DFT 1125 Descriptive Geometry	2	3	3
MAT 1102 Algebra	5	0	5
ENG 1102 Communication Skills	3	0	3
PHY 1102 Applied Science	3	2	4
	16	11	20

Third Quarter	C	L	CH
DFT 1131 Mechanical Drafting	3	12	7
MAT 1104 Trigonometry	3	0	3
PSY 1101 Human Relations	3	0	3
MEC 1113 Shop Processes	2	3	3
MEC 1115 Treatment of Ferrous Metals	2	3	3
	13	18	19

Fourth Quarter	C	L	CH
DFT 1132 Mechanical Drafting	3	12	7
MEC 1114 Shop Processes	2	3	3
MEC 1116 Treatment of Non-Ferrous Metals	2	3	3
BUS 1105 Industrial Organizations	3	0	3
	10	18	16

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

MACHINIST

INTRODUCTION

PURPOSE OF CURRICULUM

This curriculum was prepared to meet a definite need for training of machinists. Surveys recently completed in North Carolina show that many of the existing industries lack time and facilities for training enough machinists to meet present and planned needs. Expanding industries already located in our State and new industries under development invariably express the need for skilled craftsmen who have the background knowledge and potential to advance.

This guide is designed to give learners the opportunity to acquire basic skills and the related technical information necessary to gain employment and build a profitable career in the machine shop industry in the State. It is comprised of the joint views of committees responsible for its development.

Job Description

The machinist is a skilled metal worker who shapes metal parts by using machine tools and hand tools. His training and experience enable him to plan and carry through all the operations needed in turning out a machined product and to switch readily from one kind of product to another. A machinist is able to select the proper tools and material required for each job and to plan the cutting and finishing operations in their proper order so that he can complete the finished work according to blueprint or written specifications. He makes standard shop computations relating to dimensions of work, tooling, feeds, and speeds of machining. He often uses precision measuring instruments such as micrometers and gages to measure the accuracy of his work to thousandths of an inch.

This skilled worker must be able to set up and operate most types of machine tools. The machinist also must know the composition of metals so that he can heat and quench cutting tools and parts to improve machinability. His wide knowledge enables him to turn a block of metal into an intricate, precise part.

MACHINIST

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE First Quarter	C	L	CH
MEC 1101 Machine Shop Theory and Practice	3	12	7
MAT 1101 Fundamentals of Mathematics	5	0	5
DFT 1104 Blueprint Reading: Mechanical	0	3	1
ENG 1101 Reading Improvement	2	0	2
PHY 1101 Applied Science	3	2	4
	13	17	19

Second Quarter	C	L	CH
MEC 1102 Machine Shop Theory and Practice	3	12	7
MAT 1103 Geometry	3	0	3
DFT 1105 Blueprint Reading: Mechanical	0	3	1
PHY 1102 Applied Science	3	2	4
ENG 1102 Communication Skills	3	0	3
	12	17	18

Third Quarter	C	L	CH
MEC 1103 Machine Shop Theory and Practice	3	12	7
MEC 1115 Treatment of Ferrous Metals	2	3	3
DFT 1106 Blueprint Reading: Mechanical	0	3	1
MAT 1104 Trigonometry	3	0	3
PSY 1101 Human Relations	3	0	3
	11	18	17

Fourth Quarter	C	L	CH
MEC 1104 Machine Shop Theory and Practice	3	12	7
MEC 1116 Treatment of Non-Ferrous Metals	2	3	3
WLD 1101 Basic Gas Welding	0	3	1
MAT 1123 Machinist Mathematics	3	0	3
BUS 1105 Industrial Organizations	3	0	3
	11	18	17

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

RADIO AND TELEVISION SERVICING

INTRODUCTION

PURPOSE OF CURRICULUM

Within recent years improved electronic techniques have provided expanded entertainment and educational facilities in the form of monochrome and color television, frequency modulated radio, high fidelity amplifiers and stereophonic sound equipment. These developments require expanded knowledge and skill of the individual who would qualify as a competent and up-to-date serviceman.

This curriculum guide provides a training program which will provide the basic knowledge and skills involved in the installation, maintenance and servicing of radio, television and sound amplifier system. A large portion of time is spent in the laboratory verifying electronic principles and developing servicing techniques.

Job Description

A radio and television serviceman may be required to install, maintain and service amplitude modulated and frequency modulated home and auto radios, transistorized radios, monochrome and color television sets, intercommunication, public address and paging systems, high fidelity and stereophonic amplifiers, record players and tape recorders.

His work will require meeting the public both in the repair shop and on service calls. A serviceman who establishes his own business will also need to know how to maintain business records and inventory.

RADIO AND TELEVISION SERVICING

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE First Quarter	C	L	CH
MAT 1115 Electrical Mathematics	5	0	5
ENG 1101 Reading Improvement	3	0	3
ELC 1112 Direct & Alternating Current	5	15	10
	13	15	18

Second Quarter	C	L	CH
MAT 1116 Electrical Mathematics	5	0	5
ENG 1102 Communication Skills	3	0	3
ELN 1122 Vacuum Tubes & Circuits	5	9	8
ELN 1123 Amplifier Systems	2	6	4
	15	15	20

Third Quarter	C	L	CH
ELN 1125 Radio Receiver Servicing	2	6	4
ELN 1126 Transistor Theory & Circuits	4	10	9
PSY 1101 Human Relations	3	0	3
	9	21	16

Fourth Quarter or Option	C	L	CH
ELN 1127 Television Receiver Circuits and Servicing	10	15	15
BUS 1103 Small Business Operations	3	0	3
	13	15	18

Fourth Quarter Option	C	L	CH
ELN 1128 Television Receiver Circuits and Servicing	5	12	9
Elective (1)	3	6	6
BUS 1103 Small Business Operations	3	0	3
	11	18	18

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

AUTOMOTIVE

INTRODUCTION

PURPOSE OF CURRICULUM

This Curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair or adjust automotive vehicles. Manual skills are developed in practical shop work. Thorough understanding of the operating principles involved in the modern automobile comes in class assignments, discussion, and shop practice.

Complexity in automotive vehicles increases each year because of scientific discovery and new engineering. These changes are reflected not only in passenger vehicles, but also in trucks, buses and a variety of gasoline-powered equipment. This curriculum provides a basis for the student to compare and adapt to new techniques for servicing and repair as vehicles are changed year by year.

Job Description

Automobile mechanics maintain and repair mechanical, electrical, and body parts of passenger cars, trucks, and buses. In some communities and rural areas they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition. They use shop manuals and other technical publications.

Automotive mechanics in smaller shops usually are general mechanics qualified to perform a variety of repair jobs. A large number of automobile mechanics specialize in particular types of repair work. For example, some may specialize in repairing only power steering and power brakes, or automatic transmissions. Usually such specialists have an all-round knowledge of automotive repair and may occasionally be called upon to do other types of work.

AUTOMOTIVE

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	L	CH
PME 1101 Internal Combustion Engines	3	12	7
MAT 1101 Fundamentals of Mathematics	5	0	5
ENG 1101 Reading Improvement	2	0	2
PHY 1101 Applied Science	3	2	4
	13	14	18

Second Quarter	C	L	CH
PME 1102 Engine Electrical and Fuel Systems	5	12	9
ENG 1102 Communication Skills	3	0	3
DFT 1101 Schematics and Diagrams: Power Mechanics	0	3	1
PHY 1102 Applied Science	3	2	4
	11	17	17

Third Quarter	C	L	CH
AUT 1123 Automotive Chassis and Suspension Systems	3	9	6
AUT 1121 Braking Systems	3	3	4
PSY 1101 Human Relations	3	0	3
AHR 1101 Automotive Air Conditioning	2	3	3
WLD 1101 Basic Gas Welding	0	3	1
	11	18	17

Fourth Quarter	C	L	CH
AUT 1124 Automotive Power Train Systems	3	9	6
AUT 1125 Automotive Servicing	3	9	6
BUS 1103 Small Business Operations	3	0	3
	9	18	15

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

COURSES OF INSTRUCTION

AIR CONDITIONING & REFRIGERATION (AHR)

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-AHR 101 Fundamentals of Refrigeration I	4	3*	5

Terminology, laws of refrigeration, absolute pressure and absolute temperature, energy conversion units; specific heat, latent heat, and sensible heat; measurement of heat in quantity and intensity; tone of refrigeration, pressure temperature relationships, transfer of heat by conduction, convection and radiation; elementary refrigeration, refrigeration cycle and refrigerant controls. Tools, materials and methods applicable to air conditioning, and refrigeration. Prerequisite: None.

	Class	Lab	Quarter Hours Credit
T-AHR 102 Fundamentals of Refrigeration II	3	6*	5

Refrigerants and their application in commercial refrigeration; system components, accessories, installation procedures and techniques; diagnosing service problems of mechanical difficulties; methods of defrosting; and making sketches of designs for high, medium, and low temperature installations. Symbols for refrigeration and piping equipment will be used in making sketches. Prerequisites: T-AHR 101, T-PHY 101.

	Class	Lab	Quarter Hours Credit
T-AHR 103 Commercial Refrigeration Systems Design	3	6*	5

Procedures of load calculating used in commercial refrigeration. Various types of installations are studied with emphasis on the product to be cooled, the desired temperatures to be maintained, and humidity conditions. Problems involving system balance and component capacity. Use of heat load charts, pipe sizing tables, manufacturers data, and specification sheets.
Prerequisite: T-AHR 102.

	Class	Lab	Quarter Hours Credit
T-AHR 201 Heating Principles	3	4	5

Warm air systems, heat emitters, electric heating, forced hot water and steam heating systems including selection and sizing of equipment—registers, grills, furnaces, boilers, radiators, baseboards, piping, and ducts. Fuels and burners used in supplying heat for various types of heating systems—coal, oil, natural gas, manufactured gas, liquefied petroleum gas, and electricity. Experiments in equipment selection, installation, adjusting, and servicing will be conducted. Heating layout and specifications for an existing structure or one in blueprint stage will be prepared.
Prerequisites: T-PHY 101, T-DFT 102.

	Class	Lab	Quarter Hours Credit
T-AHR 202 Fuels and Burners	2	3*	3

Advanced course in heating systems with emphasis on new types of fuels and burners. Demonstrations and experiments with mock-ups and sample systems of gas, fuel oil and electrical installations. Experiments in equipment selection, installation, and maintenance will be conducted.
Prerequisite: T-AHR 201.

Course Hours per Week — Class, Lab — Quarter Hours Credit

T-AHR 203 Air-Conditioning Principles 5 6* 7

An introduction to air distribution. Humidity, saturated and unsaturated mixtures; psychrometric charts and graphs; specific heat and air flow calculations, heat load calculations, the state of mixture of two air streams, bypass factor and dehumidification.
Prerequisite: T-AHR 103.

T-AHR 209 Air-Conditioning Systems Design 5 6* 7

Self-contained units, remote units, unitary systems and control systems. Chilled water units, air duct units, high velocity duct units. Air and/or water-cooled systems, centrifugal pressure systems, conventional systems, absorption systems, air-handling and filtering systems.
Prerequisites: T-AHR 203, T-AHR 201.

T-AHR 210 Installation and Design Problems 2 6* 4

This course will consist of making drawings from designs that emphasize commercial refrigeration and air-conditioning layouts. Information is gathered, calculations are made, schematic drawings are prepared, and specifications written for the specified installations.
Prerequisites: T-DFT 226, T-AHR 203.

T-AHR 216 Circuits and Controls I 3 3* 4

Electric, electronic and pneumatic controls as related to ventilation, refrigeration, and air-conditioning systems. Practice in layouts, including symbols and schematic diagrams. Laboratory work in installations of control systems. Test instruments and their use. System adjustments for proper operation.
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103.

T-AHR 217 Circuits and Controls II 3 3* 4

Practice in layouts, selection, installation and trouble-shooting of conventional refrigeration and air-conditioning control systems. Class and laboratory work includes control of residential and commercial heating and air conditioning systems. Control problems of mechanical refrigeration, zone and central-fan systems, unit heaters and ventilators, peripheral air conditioning units and radiant-panel heating are studied.
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103, T-AHR 216.

T-AHR 227 Estimating and Contracts 3 6* 5

Cost estimation, plans and specifications, equipment take-off, materials take-off, labor take-off, sub-contractors' estimates, overhead cost, and bid and contract procedures.
Prerequisites: T-AHR 203, T-DFT 226.

T-AHR 230 Seminar and Research 1 4 3

Successful completion of the Air-Conditioning and Refrigeration Technology curriculum is climaxed by the student conducting a research project and writing a report on this project. The student, through consultation with

the instructors, will choose an individual project that will, when feasible, involve an actual installation. Frequent conferences with instructor will guide the student in the progress of research and in the preparation of the report.
Prerequisites: T-AHR 201, T-AHR 216, T-AHR 203.

AHR 1101 Automotive Air Conditioning 2 3 3

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system.
Prerequisite: PHY 1102.

AHR 1121 Principles of Refrigeration 3 12 7

An introduction to the principles of refrigeration, terminology, the use and care of tools and equipment, and the identification and the function of the component parts of a system. Other topics to be included will be the basic laws of refrigeration; characteristics and comparison of the various refrigerants; the use and construction of valves, fittings, and basic controls. Practical work includes tube bending, flaring and soldering. Standard procedure and safety measures are stressed in the use of special refrigeration service equipment and the handling of refrigerants.
Prerequisite: None.

AHR 1122 Domestic and Commercial Refrigeration 3 9 6

Domestic refrigeration servicing of conventional, hermetic, and absorption systems. Cabinet care, controls, and system maintenance in domestic refrigerators, freezers, and window air conditioning units is stressed. Commercial refrigeration servicing of display cabinets, walk-in cooler and freezer units, and mobile refrigeration systems is studied. The use of manufacturers' catalogs in sizing and matching system components and a study of controls, refrigerants, servicing methods is made. The American Standard Safety Code for Refrigeration is studied and its principles practiced.
Prerequisite: AHR 1121.

AHR 1123 Principles of Air Conditioning 3 12 7

Work includes the selection of various heating, cooling and ventilating systems, investigation and control of factors affecting air cleaning, movement, temperature, and humidity. Use is made of psychrometric charts in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Practical sizing and balancing of ductwork is performed as needed.
Prerequisite: AHR 1122.

AHR 1124 Air Conditioning and Refrigeration Servicing 3 6 5

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification and temperature control of air in an air conditioned space. Installation of various ducts and lines needed to connect various components is made. Shop work involves burner operation, controls, testing and adjusting of air conditioning and refrigeration equipment, and location and correction of equipment failure.

Prerequisite: AHR 1123.

Course	Class	Lab	Quarter Hours Credit
AHR 1126 All Year Comfort Systems	3	6	5

Auxiliary equipment used in conjunction with refrigeration systems to provide both heating and cooling for "all year" comfort will be studied and set up in the laboratory. Included will be oil fired systems, gas fired systems, water circulating systems, and electronic-resistance systems. Installation of heat pumps will be studied along with servicing techniques. Reversing valves, special types of thermostatic expansion valves, systems of de-icing coils, and electric wiring and controls are included in the study.

Prerequisites: AHR 1123, AHR 1128.

Course	Class	Lab	Quarter Hours Credit
AHR 1128 Automatic Controls	3	6	5

Types of automatic controls and their function in air conditioning systems. Included in the course will be electric and pneumatic controls for domestic and commercial cooling and heating; zone controls, unit heater and ventilator controls, commercial fan systems controls, commercial refrigeration controls, and radiant panel controls.

Prerequisites: ELC 1102, AHR 1122.

ART (ART)

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-ART 105 History of Art	3	0	3

A study of the origins and development of art forms from the beginning through contemporary. Lecture discussion documented with paintings, sculpture, reproductions and films.

Prerequisite: None.

AUTOMOTIVE (AUT)

AUT 1121 Braking Systems	3	3	4

A complete study of various braking systems employed on automobiles and light weight trucks. Emphasis is placed on how they operate, proper adjustment, and repair.

Prerequisite: PHY 1102.

AUT 1123 Automotive Chassis and Suspension Systems	3	9	6

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, and front end and alignment.

Prerequisite: PME 1102.

AUT 1124 Automotive Power Train Systems	3	9	6

Principles and functions of automotive power train systems: clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair.

Prerequisites: PHY 1102, AUT 1123.

AUT 1125 Automotive Servicing	3	9	6

Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the various component systems of the automobile. Troubleshooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing.

Prerequisites: AUT 1123, AUT 1121, AHR 1101.

BUSINESS (BUS)

	Course Hours per Week		Quarter Hours
	Class	Lab	Credit
T-BUS 101 Introduction to Business	5	0	5

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 102 Typewriting	2	3*	3

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 103 Typewriting	2	3*	3

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms.
Prerequisite: T-BUS 102 or the equivalent. Speed requirement, 30 words per minute for five minutes.

	Class	Lab	Credit
T-BUS 104 Typewriting	2	3*	3

Emphasis on production typing problems and speed building. Attention to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms.
Prerequisite: T-BUS 103 or the equivalent. Speed requirement, 40 words per minute for five minutes.

	Class	Lab	Credit
T-BUS 106 Shorthand	3	2	4

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms, and phrases.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 107 Shorthand	3	2	4

Continued study of theory with greater emphasis on dictation and elementary transcription.
Prerequisite: T-BUS 106 or the equivalent.

	Class	Lab	Credit
T-BUS 108 Shorthand	3	2	4

Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription.
Prerequisite: T-BUS 107.

	Course Hours per Week		Quarter Hours
	Class	Lab	Credit
T-BUS 110 Office Machines	2	2	3

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 112 Filing	3	0	3

Fundamentals of indexing and filing, combining theory and practice by the use of miniature letters, filing boxes and guides. Alphabetic, Triple Check, Automatic, Geographic, Subject, Soundex, and Dewey Decimal filing.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 115 Business Law	3	0	3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 116 Business Law	3	0	3

Includes the study of laws pertaining to bailments, sales, risk-bearing, partnership-corporation, mortgages, and property rights.
Prerequisite: T-BUS 115.

	Class	Lab	Credit
T-BUS 120 Accounting	5	2	6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned.
Prerequisite: T-MAT 110.

	Class	Lab	Credit
T-BUS 121 Accounting	5	2	6

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.
Prerequisite: T-BUS 120.

	Class	Lab	Credit
T-BUS 123 Business Finance	3	0	3

Financing of business units, as individuals, partnerships, corporations, and trusts. A detailed study is made of short-term, long-term, and consumer financing.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 124 Business Finance	3	0	3

Financing, federal, state, and local government and the ensuing effects upon the economy. Factors affecting supply of funds, monetary and credit policies.
Prerequisite: T-BUS 123.

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-BUS 178 Traffic and Transportation	3	0	3

An introductory course covering the American transportation system. Emphasis is placed on developments leading to the legislative supervision of the carriers, freight traffic territories, traffic flow, freight classifications, freight rates, and freight claims.
Prerequisite: None.

	Class	Lab	Credit
T-BUS 179 Traffic and Transportation	3	0	3

A study of the construction and filing of tariffs, freight rates, terminal facilities, storage, weights, routing, warehousing, and material handling.
Prerequisite: T-BUS 178.

	Class	Lab	Credit
T-BUS 183M Terminology and Vocabulary	3	0	3

To develop an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in business, technical, and professional offices.
Prerequisite: T-BUS 107.

	Class	Lab	Credit
T-BUS 183T Terminology and Vocabulary	3	0	3

To develop an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in business, technical, and professional offices.
Prerequisite: T-BUS 107.

	Class	Lab	Credit
T-BUS 205 Advanced Typewriting	2	3*	3

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal documents.
Prerequisite: T-BUS 104. Speed requirement, 50 words per minute for five minutes.

	Class	Lab	Credit
T-BUS 206M Dictation and Transcription	3	2	4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: T-BUS 108.

	Class	Lab	Credit
T-BUS 206T Dictation and Transcription	3	2	4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: T-BUS 108.

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-BUS 207M Dictation and Transcription	3	2	4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: T-BUS 206M.

T-BUS 207T Dictation and Transcription	3	2	4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: T-BUS 206.

T-BUS 208M Dictation and Transcription	3	2	4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. Minimum dictation rate of 120 words per minute required for five minutes on new material.
Prerequisite: T-BUS 207.

T-BUS 208T Dictation and Transcription	3	2	4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. Minimum dictation rate of 120 words per minute required for five minutes on new material.
Prerequisite: T-BUS 207.

T-BUS 211 Office Machines	2	2	3

Instructions in the operation of the bookkeeping-accounting machines, duplicating equipment, and the dictating and transcribing machines.
Prerequisite: T-BUS 110.

T-BUS 214 Secretarial Procedures	3	2	4

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization, and insurance claims.
Prerequisite: None.

T-BUS 215M Office Application	6	0	6

During the sixth quarter only, students are assigned to work in a business, technical, or professional office for six hours per week. The objective is to provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisites: T-BUS 214, T-BUS 205, T-BUS 208, T-BUS 211.

T-BUS 215T Office Application	6	0	6

During the sixth quarter only, students are assigned to work in a business, technical, or professional office for six hours per week. The objective is to

	Course Hours per Week Class	Lab	Quarter Hours Credit

provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisites: T-BUS 214, T-BUS 205, T-BUS 208, T-BUS 211.

T-BUS 217 Business Law	3	0	3

A study of the powers, policies, methods, and procedures used by the various federal, state and local administrative agencies in promoting and regulating business enterprises. It includes a consideration of the constitutional and statutory limitations on these bodies and judicial review of administrative action.
Prerequisite: T-BUS 116.

T-BUS 219 Credit Procedures and Problems	3	0	3

Principles and practices in the extension of credit; collection procedures; laws pertaining to credit extension and collection are included.
Prerequisite: T-BUS 120.

T-BUS 225 Cost Accounting	3	2	4

Nature and purposes of cost accounting; accounting for direct labor, materials, and factory burden; job cost, and standard cost principles and procedures; selling and distribution cost; budgets, and executive use of cost figures.
Prerequisite: T-BUS 121.

T-BUS 229 Taxes	3	2	4

Application of federal and state taxes to various businesses and business conditions. A study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise, and inheritance.
Prerequisite: T-BUS 121.

T-BUS 232 Sales Development	3	0	3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.
Prerequisite: None.

T-BUS 233 Personnel Management	3	0	3

Principles of organization and management of personnel, procurement, placement, training, performance checking, supervision, remuneration, labor relations, fringe benefits and security.
Prerequisite: None.

T-BUS 235 Business Management	3	0	3

Principles of business management including overview of major functions f management, such as planning, staffing, controlling, directing, and financ- ng. Clarification of the decision-making function versus the operating funcion. Role of management in business—qualifications and requirements.
Prerequisite: None.

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-BUS 237 Wholesaling	3	0	3

The development of wholesaling; present day trends in the United States. A study of the functions of wholesaling.
Prerequisite: None.

T-BUS 239 Marketing	5	0	5

A general survey of the field of marketing, with a detailed study of the functions, policies, and institutions involved in the marketing process.
Prerequisite: None.

T-BUS 243 Advertising	3	2	4

The role of advertising in a free economy and its place in the media of mass communications. A study of advertising appeals; product and market research; selection of media; means of testing effectiveness of advertising. Theory and practice of writing advertising copy for various media.
Prerequisite: None.

T-BUS 245 Retailing	3	0	3

A study of the role of retailing in the economy including development of present retail structure, functions performed, principles governing effective operation and managerial problems resulting from current economic and social trends.
Prerequisite: None.

T-BUS 247 Business Insurance	3	0	3

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included.
Prerequisite: None.

T-BUS 255 Interpreting Accounting Records	3	0	3

Designed to aid the student in developing a "use understanding" of accounting records, reports and financial statements. Interpretation, analysis, and utilization of accounting statements.
Prerequisite: T-BUS 121.

T-BUS 266 Budget and Record Keeping	3	0	3

The basic principles, methods, and procedures for preparation and operation of budgets. Special attention is given to the involvement of individual departments and the role they play. Emphasis on the necessity for accurate record keeping in order to evaluate the effectiveness of budget planning.
Prerequisite: T-BUS 121.

T-BUS 271 Office Management	3	0	3

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and actuating office problems.
Prerequisite: None.

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-BUS 272 Principles of Supervision	3	0	3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed.
Prerequisite: None.

T-BUS 280 Traffic and Transportation	3	0	3

Stresses through-route and rates, milling in transit, technical tariff and rate interpretation, overcharges and undercharges, loss and damage, import and export tariff, classification committee procedure, and rate committee procedure.
Prerequisite: T-BUS 179.

T-BUS 281 Traffic and Transportation	3	0	3

To acquaint the student with the application of the Interstate Commerce Act to practical transportation and the general procedure of requesting changes before the Interstate Commerce Commission.
Prerequisite: T-BUS 280.

T-BUS 284M Terminology and Vocabulary	3	0	3

Greater emphasis on an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in business, technical, and professional offices.
Prerequisite: T-BUS 183M.

T-BUS 285 ICC Law	3	0	3

Designed to aid the student in making a thorough analysis of the Interstate Commerce Act; review history of Act and related acts.
Prerequisite: T-BUS 116.

T-BUS 286 ICC Law	3	0	3

A detailed study is made of the procedural policy involved in appearing before the Interstate Commerce Commission.
Prerequisite: T-BUS 285.

T-BUS 287 ICC Law	3	0	3

Devoted to case study of applications of the Interstate Commerce Act.
Prerequisite: T-BUS 286.

T-BUS 290 Motor Carrier	3	0	3

An introduction to special problems relating to tariffs and rates of motor carriers.
Prerequisite: None.

T-BUS 291 Motor Carrier	3	0	3

A continuation of special problems relating to tariffs, rates, circulars, pertaining to the Motor Carrier field.
Prerequisite: T-BUS 290.

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-BUS 295 Traffic Claims	3	0	3

Designed to provide knowledge about rights and liabilities of carriers, cosignors, and cosignees; claims, their procedure, settlement, and prevention.
Prerequisite: None.

T-BUS 298 Material Handling	3	0	3

A study of basic containers and equipment, packaging and material protection, standardization, warehousing, traffic, and shipping. The various analytical approaches used in formulating materials handling improvements in existing or proposed operations.
Prerequisite: None.

T-BUS 299 Traffic Management	3	0	3

Develops the purpose, function, and operation of traffic management; illustrates the differences in various areas of traffic; and shows relationship to other business operations.
Prerequisite: None.

T-BUS 300S Current Trends in Business	6	0	6

Designed to aid the student to become more aware of current trends in the business world through reading, reporting, and informal discussions.
Prerequisite: Advance standing in Business Administration.

BUS 1102 Typewriting	2	3	3

A beginning course in touch typewriting, with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, and tabulation.
Prerequisite: None.

BUS 1103 Small Business Operations	3	0	3

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations.
Prerequisite: None.

BUS 1105 Industrial Organizations	3	0	3

Methods, techniques, and practices of modern management in planning, organizing and controlling operations of a manufacturing concern. Introduction to the competitive system and the factors constituting product cost.
Prerequisite: None.

CHEMISTRY (CHM)

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-CHM 101 Chemistry	4	2	5

Study of the physical and chemical properties of substances, chemical changes, elements, compounds, gases, chemical combinations, weights and measurements, theory of metals, acids, bases, salts, solvents, solutions, and emulsions. In addition, study of carbohydrates, electrochemistry, electrolytes, and electrolysis in their application of chemistry to industry.
Prerequisite: T-MAT 101.

T-CHM 102 Chemistry	4	2	5

General course in inorganic chemistry. Properties of acids, salts, bases, and solutions. Chemical and physical properties of selected inorganic elements are studied in detail. Laboratory work will consist of various inorganic tests and experiments.
Prerequisite: T-CHM 101.

T-CHM 111 General Chemistry	4	3*	5

An introductory chemistry course involving chemical terminology, atomic structure, properties of some elements, and the functions of the periodic table. Properties of compounds and mixtures are studied as are types of chemical reactions. Laboratory work consists of various inorganic reactions and preparations.
Prerequisite: None.

T-CHM 112 General Chemistry	4	3*	5

A study of the properties of elements not covered in T-CHM 101 and a study in greater depth of the combining properties of the elements including equivalent weights. Laboratory work includes chemical reactions and an investigation of properties of solutions.
Prerequisite: T-CHM 111.

T-CHM 121 Quantitative Chemical Analysis	3	6*	5

Emphasis is placed on developing laboratory techniques employed in the volumetric analysis of acids and bases. The students will become thoroughly familiar with the principles and procedures of neutralization titration. Classroom work will emphasize the stoichiometric calculations involved in interpreting the results of analysis. Laboratory work will consist of percentage analysis of selected substances.
Prerequisite: T-CHM 112.

T-CHM 222 Quantitative Chemical Analysis	2	9*	5

The more complex types of quantitative analysis. Special emphasis on the theory of oxidation-reduction and gravimetric analysis. Instrumental analysis is introduced and use of modern analytical devices is stressed. The student will become familiar with the principles of redox reactions, ionization constants and pH of solution. Stress is placed on the stoichiometric calculations of quantitative chemical analysis. Classroom work complements quantitative determinations in the laboratory.
Prerequisite: T-CHM 121.

	Course Hours per Week Class	 Lab	Quarter Hours Credit
T-CHM 227 Physical Chemistry	3	2	4

Atomic theory, states of matter, chemical thermodynamics, molecular properties of solutions, equilibria, phase role, electrochemistry, kinetics, surface chemistry, and photochemistry constitute major areas of study.
Prerequisite: T-CHM 121.

T-CHM 231 Organic Chemistry	3	6*	5

Nomenclature, structure, preparation, properties, and reactions of aliphatic organic compounds. Laboratory work emphasizes techniques.
Prerequisite: T-CHM 222.

T-CHM 232 Organic Chemistry	3	6*	5

The nomenclature, structure, preparation, properties, and reactions of aromatic organic compounds. Laboratory work emphasizes techniques and involves preparation and analysis of selected organic compounds.
Prerequisites: T-CHM 231, T-CHM 227.

T-CHM 241 Industrial Chemical Analysis	3	9*	6

An industrial laboratory situation is simulated. Principles and techniques learned in previous quarters are utilized in solution of problems common to local industry. It will be the responsibility of the instructor to determine and submit in outline form a program of suitable scope and sequence of topics which he will work out from consultation with his local advisory committee, representing the industry. This program must be approved by the administration and accepted by the appropriate State-level authority.
Prerequisites: T-CHM 222, T-CHM 227.

T-CHM 242 Industrial Chemical Analysis	3	12*	

An industrial laboratory situation is maintained and the emphasis on instrumentation is expanded. Problems of industrial quality control. Plant visitations.
Prerequisite: T-CHM 241.

T-CHM 250S Qualitative Inorganic Analysis	2	4	4

General principles involved in separation and identification of the more common cations and anions. Laboratory practice in identifying the ions in a variety of unknowns.
Prerequisite: T-CHM 111 and T-CHM 112.

COMMERCIAL ART (CAT)

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-CAT 101 Advertising Principles	3	0	3

A comprehensive survey of the history and development of advertising including a discussion of its economic and social values. An introduction to advertising media and current publications in the field.
Prerequisite: None.

	Class	Lab	Quarter Hours Credit
T-CAT 105 Life Study	2	3*	3

A study of the body structure with emphasis on the skeletal and muscular systems, movement and the aging process. Graphical interpretation and response to live models with emphasis on proportioning, masses and movement.
Prerequisite: None.

	Class	Lab	Quarter Hours Credit
T-CAT 106 Life Study	0	6*	2

Graphical interpretation and response to the live model covering topics such as proportioning, the aging process, character, expression and draping the model. This course will deal with building of the figure and such ingredients as placement, balance, rhythm, turning, twisting, wedging, distribution of masses, perspective of form, planes of form, abdominal arch, hair forms and variations.
Prerequisite: T-CAT 105.

	Class	Lab	Quarter Hours Credit
T-CAT 110 Industrial Illustration	2	6*	4

A comprehensive approach to the tools, equipment, materials and utilization of the illustration. Laboratory exercises and problems covering such topics as retouching photographs, product illustrations, production illustrations, renderings, preparation of visual charts, graphs and composites.
Prerequisite: T-DFT 102.

	Class	Lab	Quarter Hours Credit
T-CAT 116 Photography	2	6*	4

An introduction to the field of photography, photographic equipment and materials. A study of the fundamental techniques of the camera and its expressive possibilities in relation to the field of design and visual communications. Assigned camera projects, darkroom procedures and equipment.
Prerequisite: None.

	Class	Lab	Quarter Hours Credit
T-CAT 121 Commercial Art & Advertising Design	3	9*	6

An introduction to drawing and basic design fundamentals and principles. Emphasis is placed on line, two-and three-dimensional shapes, letter indication, sketching, perspective, light and shade, equipment and materials of the art and design profession.
Prerequisite: None.

Course Hours per Week — Class, Lab — Quarter Hours Credit

T-CAT 122 Commercial Art & Advertising Design 3 9* 6

Advanced material in drawing, basic design, lettering, equipment, and materials. Emphasis is placed on two-and three-dimensional form, perspective, sketching, rough and finished lettering. Laboratory will consist of assigned graphical problems with critique and discussion by class participation.
Prerequisite: T-CAT 121.

T-CAT 123 Commercial Art & Advertising Design 3 9* 6

Introduction to layout and design for printing. Mechanics of layout, properties of type, and basic reproductive processes. Laboratory exercises will consist of preparation of comprehensive art form for presentation on magazine covers, trademarks, book covers, textile designs, furniture designs, two- and three-dimensional display figures. Assigned graphical problems with critique and discussion by class members.
Prerequisite: T-CAT 122, T-DFT 102.

T-CAT 205 Advertising Copywriting 3 0 3

A study of the techniques used in creating effective advertising copy for various types of media; purposes and duties of the copywriter and legal problems encountered in copywriting. Theory and practice will be given in writing copy for the various media including retail and fashion copy, mail order, direct mail, business publications, radio and television.
Prerequisite: T-ENG 103.

T-CAT 212 Advertising Illustration 1 3* 2

An introduction to advertising illustration through problems in shape, space, and light analysis. Laboratory exercises will explore the use of various media.
Prerequisite: T-CAT 123.

T-CAT 213 Advertising Illustration 1 3* 2

Advanced work and assigned problems in advertising illustration. The student is urged to explore a variety of mediums.
Prerequisite: T-CAT 212.

T-CAT 214 Advertising Illustration 1 3* 2

Assigned problems in advanced illustration. Emphasis is placed on originality and the readiness of the student to explore assigned graphical tasks and problems.
Prerequisite: T-CAT 213.

T-CAT 217 Photography 2 6* 4

Advanced photographic techniques and materials. Participation in studio and laboratory procedures illustrating the various applications and creative possibilities of photography in advertising.
Prerequisite: T-CAT 116.

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-CAT 224 Commercial Art & Advertising Design	3	9*	6

An introduction to cartooning, intermediate layout and design techniques for printing. Laboratory assigned graphical problems will cover such topics as color separation, halftones, and materials for the development of posters, show cards, banners, hand-lettered documents, brochures and folders.
Prerequisite: T-CAT 123.

T-CAT 225 Commercial Art & Advertising Design	3	9*	6

Advanced problems in layout and design techniques for printing, illustration, cartooning, animation, display design and lettering. Laboratory and graphic problems dealing with magazine and book illustrations, the fashion figure, outdoor sign writing, displays and exhibits for business and industry.
Prerequisite: T-CAT 224.

T-CAT 226 Commercial Art & Advertising Design	3	9*	6

A course providing similated professional working conditions utilizing advanced layout and design techniques for printing. Each student will explore a variety of problems and present his solutions for general class critique and discussion. This course will climax with the review and presentation of the student's individual portfolio of professional work.
Prerequisite: T-CAT 225.

T-CAT 231 Painting with Polymers	2	6*	4

An introduction to the medium: a study of the techniques used in painting and illustration with the relatively new acrylic polymer emulsions. Students may select projects or complete assigned projects.
Prerequisite: None.

T-CAT 235 Advertising Art Direction	5	0	5

A study of the techniques used in creating effective advertising for various types of media. The physical consideration of the advertisement such as size, position, color, frequency of insertion, layout, coupons and inquiries. Analysis of techniques to cases in national, retail, mail order, industrial and professional advertising with consideration given to budgetary practices.
Prerequisite: T-CAT 101, T-CAT 225.

DENTAL (DEN)

	Course Hours per Week Class	Lab	Quarte Hours Credit
DEN 1001 Introduction to Dental Assisting	2	0	2

An introduction to the history of dental assisting, the modern role of th dental assistant in practice and in relation to other members of the denta health team, and the personal and ethical requirements for safe and effectiv practice.
Prerequisite: None.

DEN 1002 Dental Materials	2	9	5

Identification of dental materials, characteristics of each, evaluation o quality, and principles and procedures related to manipulation and storag of various dental materials.
Prerequisite: None.

DEN 1003 Preclinical Sciences I	3	3	4

Basic information from bacteriology, anatomy and physiology, and oral an dental anatomy as related to dental science and the practice of dental assis ing. Designed as three units which may be scheduled for either concurrer or sequential teaching.
Prerequisite: None.

DEN 1004 Preclinical Sciences II	4	0	4

Fundamental information from oral pathology, pharmacology, nutritio and common emergencies as related to the role of the dental assistant. D signed in four units to permit flexibility in scheduling.
Prerequisite: DEN 1003.

DEN 1005 Dental Accounting	3	2	4

Fundamentals of accounting as applied to dental office procedures. Pra tice in application of principles to various forms commonly used in the dent office.
Prerequisite: None.

DEN 1006 Clinical Procedures I	5	9	8

Principles and procedures related to radiology, dental instruments ar equipment, and chairside techniques of dental assisting. Designed in thr units for flexibility in scheduling.
Prerequisite: DEN 1002.

DEN 1007 Clinical Procedures II	5	6	7

Role of the dental assistant in various dental specialties, such as endodo tics, periodontics, orthodontics, prosthodontics, and oral surgery.
Prerequisite: DEN 1006.

	Course Hours per Week		Quarter Hours
	Class	Lab	Credit
DEN 1008 Dental Office Management	4	3	5

Principles and procedures related to management of the dental office, including maintenance of inventories, ordering of supplies, patient records, financial records, making appointments and establishing favorable patient relations.
Prerequisite: DEN 1005.

DEN 1009 Dental Office Practice I	0	12	4

Introduction to practice in the dental office or dental clinic; emphasis is on the role of the dental assistant in the operatory in a variety of dental procedures.
Prerequisite: DEN 1008

DEN 1010 Dental Office Practice II	0	21	7

Practice in the dental office or dental clinic; rotation of assignments to encompass experience in office management, the dental laboratory, and the operatory. Emphasis on chairside assisting in a variety of clinical procedures.
Prerequisite: DEN 1009.

DEN 1011 Dental Assistant Seminar	1	0	1

Study of personal responsibilities as a practitioner, including employee-employer relations, opportunities for continued development as a person and as a health worker, and importance of organization membership.
Prerequisite: None.

DRAFTING AND DESIGN (DFT)

	Course Hours per Week Class	Course Hours per Week Lab	Quarter Hours Credit
T-DFT 101 Technical Drafting	0	6*	2

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning.

	Class	Lab	Credit
T-DFT 102 Technical Drafting	0	6*	2

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphical analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and developments of various types of geometrical objects.
Prerequisite: T-DFT 101.

	Class	Lab	Credit
T-DFT 103 Technical Drafting	0	6*	2

Intersection and developments and their practical solutions. Where applicable, model solutions accompany the problems. The various techniques employed to produce and render isometric and oblique drawings, isometric, dimetric and trimetric projections, will be included.
Prerequisite: T-DFT 102.

	Class	Lab	Credit
T-DFT 201 Technical Drafting	2	6*	4

Applications and constructions of charts, graphs, and nomographs in engineering and technical data. Screw threads, springs, keys, rivets, piping, and welding symbols, methods of representing and specifying will be covered. Basic mechanisms of motion transfer, gears and cams, will be studied and drawn with emphasis on methods of specifying, calculating, dimensions, and delineating.
Prerequisite: T-DFT 103.

	Class	Lab	Credit
T-DFT 204 Descriptive Geometry	2	4	4

Graphic analysis of space problems involving points, lines, planes, connectors, and a combination of these. Practical design problems will be stressed with analytical verification where applicable. Visualization shall be stressed on every problem.
Prerequisites: T-DFT 102, T-MAT 102.

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-DFT 205 Design Drafting I	2	6*	4

Basic design is introduced in the study of motion transfer mechanisms as they relate to power trains. Principles of design sketching, design drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices constitute areas of study. Types and methods of specifying materials and workmanship are an integral part of the course.
Prerequisites: T-DFT 204, T-MAT 102, T-PHY 102.

T-DFT 206 Design Drafting II	2	6*	4

Research to solve a problem in design by consulting various manuals, periodicals, and through laboratory experiments. A written technical report, preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem.
Prerequisites: T-DFT 205, T-DFT 210.

T-DFT 211 Mechanisms	3	2	4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkages, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains.
Prerequisites: T-DFT 201 & 204, T-MAT 103, T-PHY 106.

T-DFT 212 Jig and Fixture Design	2	6*	4

Commercial standards, principles, practices and tools of jig and fixture design. Individual project and design work to acquaint students with the types of jigs and fixtures and their design.
Prerequisites: T-DFT 205, T-DFT 211.

T-DFT 226 Air-Conditioning Systems Drawing	0	6*	2

Drawing of air-conditioning systems and study of related architectural and structural elements. Sheet metal intersections and developments and types of duct installation. Air-conditioning and refrigeration layouts, diagrams, and schematics.
Prerequisites: T-DFT 102, T-AHR 103, T-AHR 201, T-AHR 216.

DFT 1101 Schematics & Diagrams: Power Mechanics	0	3	1

Interpretation and reading of blueprints. Development of ability to read nd interpret blueprints, charts, instruction and service manuals, and wiring liagrams. Information on the basic principles of lines, views, dimensioning rocedures, and notes.
rerequisite: None.

FT 1104 Blueprint Reading: Mechanical	0	3	1

Interpretation and reading of blueprints. Information on the basic princi-les of the blueprint; lines, views, dimensioning procedures and notes.
rerequisite: None.

	Course Hours per Week Class	Course Hours per Week Lab	Quarter Hours Credit
DFT 1105 Blueprint Reading: Mechanical	0	3	1

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes.
Prerequisite: DFT 1104.

DFT 1106 Blueprint Reading: Mechanical	0	3	1

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly.
Prerequisite: DFT 1105.

DFT 1116 Blueprint Reading: Air Conditioning	1	3	2

A specialized course in drafting for the heating, air conditioning and refrigeration student. Emphasis will be placed on reading of blueprints that are common to the trade; blueprints of mechanical components, assembly drawings, wiring diagrams and schematics, floor plans, heating system plans including duct and equipment layout plans, and shop sketches. The student will make tracings of floor plans and layout air conditioning systems.
Prerequisite: DFT 1122.

DFT 1121 Drafting	3	12	7

An introduction to drafting and the study of drafting practices. Instruction is given in the selection, use and care of instruments, singlestroke lettering, applied geometry, freehand sketching consisting of orthographic and pictorial drawings. Orthographic projection, reading and instrument drawing of principal views, single auxiliary views (primary), and double (oblique) auxiliary views will be emphasized. Dimensioning and note practices will be studied with reference to the American Standards Association practices. Methods of reproducing drawings will be included at the appropriate time.
Prerequisite: None.

DFT 1122 Drafting	3	6	5

The trainee will study simple and successive revolutions and their applications to practical problems. Sections and conventions will be studied and both detail and assembly sections will be drawn. Intersections and developments will be studied by relating the drawing to the sheet metal trades. Models of the assigned drawings will be made from construction paper, cardboard, or similar materials as a proof of the solution to the problems drawn.

Methods of drawing and projecting axonometric, oblique, and perspective drawings will be studied with emphasis on the practical applications of pictorial drawings. Various methods of shading will be introduced and dimensioning and sectioning of oblique and axonometric pictorials will be done.
Prerequisite: DFT 1121.

	Course Hours per Week Class	 Lab	Quarter Hours Credit
DFT 1125 Descriptive Geometry	2	3	3

Graphical analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Included are problems dealing with solid geometry theorems. Where applicable, each graphical solution shall be accompanied by the analytical solution.
Prerequisite: DFT 1121.

DFT 1131 Mechanical Drafting	3	12	7

An introduction to mechanical drafting beginning with problems concerning precision and limit dimensioning. Methods of fastening materials, and fasteners: keys, rivets, springs, and welding. Symbols will be studied and drawings will be made involving these items. Principles of design will be introduced with the study of basic mechanisms of motion transfer; gears, cams, power trains, pulleys, belting and methods of specifying and calculating dimensions will be studied. Drawings will be made involving these mechanisms.
Prerequisite: DFT 1122.

DFT 1132 Mechanical Drafting	3	12	7

Principles of design sketching, design drawings, layout drafting, detailing from layout drawings, production drawings and simplified drafting practices constitute areas of study. Forging and casting drawings will be made from layouts. Specifications, parts list and bill of materials are emphasized in this course. The student will develop a complete set of working drawings of a tool, jig, fixture or simple machine and learn principles of design, handbook and manual usage.
Prerequisite: DFT 1131.

ECONOMICS (ECO)

	Course Hours per Week		Quarte Hours
	Class	Lab	Credit
T-ECO 102 Economics	3	0	3

The fundamental principles of economics including the institutions an practices by which people gain a livelihood. Included is a study of the laws o supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise an to society at large.
Prerequisite: None.

T-ECO 104 Economics	3	0	3

Greater depth in principles of economics, including a penetration into th composition and pricing of national output, distribution of income, international trade and finance, and current economic problems.
Prerequisite: T-ECO 102.

T-ECO 106 Economics of Transportation	3	0	3

Acquaints the student with the economic aspects of transportation. Complete discussion from the earliest form of basic transportation to our presen complex system of transportation. In addition to the historical approach, consideration is given to the economic factors involved in plant location an principles involved in present-day developments of transportation.
Prerequisite: T-ECO 102.

T-ECO 108 Consumer Economics	3	0	3

Designed to help the student use his resources of time, energy, and mone to get the most out of life. It gives the student an opportunity to build usefu skills in buying, managing his finances, increasing his resources, and t understand better the economy in which he lives.
Prerequisite: None.

ELECTRICAL (ELC)

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-ELC 101 Fundamentals of Electricity	4	4 or 6	6

Elementary principles of electricity including: basic electric units, Ohms law, Kirchhoffs law, network theorems, magnetics, basic electrical measuring instruments, inductance, capacitance, sine wave analysis, and non-resonant resistive, inductive and capacitive networks.
Prerequisite: None.

	Class	Lab	Quarter Hours Credit
T-ELC 102 Fundamentals of Electricity	4	4 or 6	6

Series and parallel resonant-circuit analysis, resonant and non-resonant transformer analysis, basic diode power supply analysis, introduction to non-linear resistive control devices, and introduction to electro-mechanical devices.
Prerequisite: T-ELC 101.

	Class	Lab	Quarter Hours Credit
T-ELC 201 Electrical Machinery	3	0	3

A course in the basic understanding and application of electricity to modern industrial machinery. Included is a study of direct current motors, motor controls and protecting devices, transformers, and the industrial applications of this equipment.
Prerequisite: T-PHY 103.

	Class	Lab	Quarter Hours Credit
T-ELC 210 Rotating Devices	2	2	3

Introduction to electrical machinery. AC and DC motor and generator principles, synchros and servomechanisms, alternators and dynamotors, Ward-Leonard and amplidyne control systems will be analyzed. A general knowledge of the theory, operation, and maintenance of these devices and systems will be stressed.
Prerequisites: T-ELC 102, T-PHY 102.

	Class	Lab	Quarter Hours Credit
ELC 1102 Applied Electricity	2	3	3

The use and care of test instruments and equipment used in servicing electrical apparatus for air conditioning and refrigeration installations. Electrical principles and procedures for trouble-shooting of the various electrical devices used in air conditioning, heating, and refrigeration equipment. Included will be transformers, various types of motors and starting devices, switches, electrical heating devices and wiring.
Prerequisite: PHY 1101.

	Class	Lab	Quarter Hours Credit
LC 1112 Direct and Alternating Current	5	15	10

A study of the structure of matter and the electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. Analysis of direct current circuits by Ohm's law and Kirchhoff's law; sources of direct current potentials. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis.
Prerequisite: None.

ELECTRONIC DATA PROCESSING (EDP)

	Course Hours per Week		Quarter Hours
	Class	Lab	Credit
T-EDP 101 Functional Wiring Principles	2	3*	3

The fundamental principles of wiring necessary to perform basic machine functions of printing, punching, comparing and selection. A series of laboratory experiments support the theoretical aspects of this course.
Prerequisite: None.

	Class	Lab	Credit
T-EDP 102 Functional Wiring Principles	2	3*	3

Additional study of the fundamental principles of wiring necessary to perform basic machine functions of printing, punching, comparing and selection with emphasis on the accounting machine. A series of laboratory experiments support the theoretical aspects of this course.
Prerequisite: T-EDP 101.

	Class	Lab	Credit
T-EDP 104 Introduction to Data Processing Systems	3	2	4

Fundamental concepts and operational principles of data processing systems, as an aid in developing a basic knowledge of computers, prerequisit to the detail study of particular computer problems. This course is a prerequisite for all programming courses.
Prerequisite: None.

	Class	Lab	Credit
T-EDP 106 Business Programming	2	4	4

The effective use of data processing equipment in meeting the informatio needs of business; utilizing the symbolic programming system as a tool in th solution of problems. The scope of the problems developed will vary from modest payroll procedure to the total information retrieval for a large an complex business.
Prerequisites: T-EDP 101, T-MAT 101, T-EDP 104.

	Class	Lab	Credit
T-EDP 108 Scientific Programming	2	4	4

Designed to provide the student with sufficient knowledge of programmin concepts so that he may easily master any specific system with a minimu of instruction. The student will analyze, evaluate and make minor progra modifications. (Specific systems are treated in detail so that the student ma learn advanced programming and logical decision making techniques as applied in sophisticated systems.)
Prerequisites: T-EDP 106, T-MAT 102.

	Class	Lab	Credit
T-EDP 202 Programming System Techniques	3	4	5

The student will investigate the functions and capabilities of different dat processing machines and will become familiar with some of the procedur necessary for programming objectives. Programming drills, exercises, an case studies will add the realism of processing data to theoretical knowledg
Prerequisites: T-EDP 102, T-EDP 104, T-EDP 108.

Course	Title	Course Hours per Week Class	 Lab	Quarter Hours Credit
T-EDP 205	**Linear Programming and Critical Path Method**	2	4	4

Lecture and case problems encompassing the scope and potential of using mathematical programming with computers to increase industrial efficiency. This course presents the network technique of management planning, scheduling and control. Basic rules of network planning are presented with laboratory assignments designed to implement the theoretical aspects of Critical Path Methods (CPM).
Prerequisites: T-EDP 108, T-MAT 103, T-EDP 202.

Course	Title	Class	Lab	Quarter Hours Credit
T-EDP 208	**Advance Programming Techniques**	2	6	5

Detail analysis and study of computer software, mathematical modeling, simulation, and game theory. Designed to present an overview of the more complex computer applications which have been designed to facilitate decision making.
Prerequisites: T-EDP 108, T-EDP 205.

Course	Title	Class	Lab	Quarter Hours Credit
T-EDP 211	**Procedures and Techniques of Automated Design**	4	4	6

Designed to acquaint the student with existing techniques used to evaluate, modify and determine the existing relationships between isolated events and realization of the objective function. CPM, PERT, PEP and COGO are discussed in great detail, and new concepts and procedures are hypothesized and developed.
Prerequisites: T-MAT 214, T-BUS 225, T-EDP 108, T-EDP 205.

Course	Title	Class	Lab	Quarter Hours Credit
T-EDP 216	**Research Project**	1	8	5

Individual assignments of a carefully selected project will be the work of the student during this quarter. It will give the student an opportunity to nitiate and carry out a project taken from outside the school. This course places the responsibility upon the student to solve a significant problem with a minimum of assistance from the instructor.
Prerequisite: T-EDP 205.

Course	Title	Class	Lab	Quarter Hours Credit
T-EDP 219	**Systems and Procedures**	3	4	5

A study of the problems of system design and installation. Systems used n various type businesses are studied and discussed. Actual practice is given n evaluation of existing business systems directed toward the feasibility of omputer applications.
Prerequisites: T-EDP 108, T-BUS 121.

ELECTRONICS (ELN)

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-ELN 101 Electronic Instruments and Measurements	1	4 or 6	3

A study of basic electronic instruments, their theory of operation, function, tolerances, and calibration. Both service and laboratory instruments will be studied. Laboratory experience will provide application of each type instrument studied.
Prerequisite: T-ELC 102.

	Class	Lab	Credit
T-ELN 105 Control Devices	5	4 or 6	7

A study in depth of the electrical characteristics of vacuum tubes and transistors. Basic parameters and applications of each type device to the three configurations of a three terminal two port system will be included.
Prerequisite: T-ELC 102.

	Class	Lab	Credit
T-ELN 201 Industrial Controls	3	2	4

Industrial controls is the study of modern methods of controlling machinery by electronic circuitry. Machinery controls and electronic mechanisms that automatically operate machines will be studied. Types of motors, generators, control signals and devices, thyratrons, gates, switches, and servomechanism circuits are major areas of study.
Prerequisite: T-PHY 103.

	Class	Lab	Credit
T-ELN 205 Applications of Vacuum Tubes and Transistors	5	4 or 6	7

Practical applications of vacuum tubes and transistors to basic audio amplifiers, radio frequency amplifiers, detectors, modulators and oscillators.
Prerequisite: T-ELN 105.

	Class	Lab	Credit
T-ELN 210 Semiconductor Circuit Analysis	5	2 or 3	6

A study of the analysis and design of transistor circuits. Network theorems and equivalent circuits are used extensively in evaluating total circui performance. Device peculiarities and limitations pertinent to reliable operations are considered. H. Y. Z. and T. parameters are employed as well a signal-flow graphs.
Prerequisite: T-ELN 105.

	Class	Lab	Credit
T-ELN 214 Wave Shaping and Pulse Circuits	2	2 or 3	3

Broadband amplifiers, magnetic amplifiers, multivibrators, wave shapin techniques, chopper amplifiers, clipper and clamper circuits.
Prerequisites: T-ELN 105, T-MAT 103.

	Class	Lab	Credit
T-ELN 215 Wave Shaping and Pulse Circuits	2	2 or 3	3

Pulse techniques, diode switches, gates, step-counters, restorers and othe specific circuits which function as switches.
Prerequisite: T-ELN 214.

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-ELN 220 Electronic Systems	5	4 or 6	7

A block diagram course investigating numerous electronic systems. Modules or blocks of various circuits already studied are arranged in various manners to produce complex electronic systems. Systems will be explained and reduced to functions and then to block diagrams. AM, FM, and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated systems, computers, telemetry, navigational systems, sonar and radar will be considered.
Corequisite: T-ELN 215.

T-ELN 225 Transmission and Propagation	3	0	3

An introduction to the electromagnetic radiation, principles of antenna, radiation patterns and field strength. The characteristics and use of transmission lines in radio frequency application. Factors involved in propagation, ground waves, reflections, sky waves, atmospheric effects, ionosphere, fading, noise, static, wire radiators, directive gain, effect of ground, impedence, antenna systems and arrays.
Prerequisite: T-ELN 105.
Corequisite: T-ELN 205.

T-ELN 227 UHF and Microwave Systems	5	4	7

A study of UHF and VHF components, circuits, and measurement techniques. The use of distributed constant elements, waveguides and coaxial cables, microwave links, high frequency oscillators, magnetrons, klystrons, traveling wave tubes. An introduction to the use of the Smith Chart.
Prerequisite: T-ELN 225.

T-ELN 230 Television Systems	4	6	7

A study of the principles of television including the television system, amera tubes, scanning and synchronization, composite video signal, receiver ircuits, transmitting equipment, color television, and closed-loop systems.
Corequisite: T-ELN 214.

T-ELN 235 Industrial Instrumentation	4	6	7

Broad introduction to use of industrial electro-mechanical and electronic ircuits and equipment. Provides an understanding of the methods, techniques, and skills required for installation, service and operation of a variety of industrial control systems. Analysis of sensing devices for detecting changes in pressure, temperature, humidity, sound, light, electricity, the associated ciruitry and indicating and recording devices.
Prerequisites: T-ELN 205, T-PHY 104.

-ELN 240 Digital Computers	3	0	3

An exploration into the methodology of counting and computing. Various omputer techniques will be investigated including: non-sinusoidal waveforms, inary and decade counters, industrial counters, readout devices, logic ciruits, arithmetic circuits, storage devices, input-output devices, computer conrol, analog and digital converters.
rerequisite: T-ELN 214.

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-ELN 245 Electronic Design Project	0	4	2

Students are required to design and construct a project approved by the instructor. Includes selection of project, design, construction, and testing of completed project. Projects may include: AM or FM transmitter or receivers, amplifiers, test equipment, control devices, simple counters, lasers, masers, etc. Prerequisite: T-ELN 205.

	Class	Lab	Credit
ELN 1122 Vacuum Tubes and Circuits	5	9	8

An introduction to vacuum tubes and their development; the theory, characteristics and operation of vacuum diodes, semi-conductor diodes, rectifier circuits, filter circuits, triodes and simple voltage amplifier circuits.
Prerequisites: ELC 1112, MAT 1115.

	Class	Lab	Credit
ELN 1123 Amplifier Systems	2	6	4

An introduction of commonly used servicing techniques as applied to monophonic and stereophonic high fidelity amplifier systems and auxiliary equipment. The operation and servicing of inter-communication amplifiers and switching circuits will also be taught.
Prerequisites: MAT 1115, ELC 1112.

	Class	Lab	Credit
ELN 1125 Radio Receiver Servicing	2	6	4

Principles of radio reception and practices of servicing; included are block diagrams of radio receivers, servicing techniques of AM and FM receiver by resistance measurements, signal injection, voltage analysis, oscilloscop methods of locating faulty stages and components and the alignment of AM and FM receivers.
Prerequisites: ELN 1123, ELN 1122.

	Class	Lab	Credit
ELN 1126 Transistor Theory and Circuits	4	15	9

Transistor theory, operation, characteristics and their application to audi and radio frequency amplifier and oscillator circuits.
Prerequisite: ELN 1123.

	Class	Lab	Credit
ELN 1127 Television Receiver Circuits and Servicing	10	15	15

A study of principles of television receivers, alignment of radio and intermediate frequency amplifiers, adjustment of horizontal and vertical swee circuits will be taught. Techniques of troubleshooting and repair of TV receivers with the proper use of associated test equipment will be stresse Additional study of more specialized servicing techniques and oscilloscop waveform analysis will be used in the adjustment, trouble-shooting and repai of the color television circuits.
Prerequisites: ELN 1126, ELN 1125.

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
ELN 1128 Television Receiver Circuits and Servicing	5	12	9

This course, taught in conjunction with an election, will be a shorthand version of ELN 1127.
Prerequisites: ELN 1126, ELN 1125.

	Class	Lab	Quarter Hours Credit
ELN 1129 Single Side-band Systems	3	6	6

An introductory course of single side-bank transmission system with carrier frequency or without and the associated balanced modulator of phasing system used to produce this type of transmission. Time will be allotted also to the necessary circuitry in the receiver to receive this type transmission.
Prerequisites: ELN 1126, ELN 1125.

	Class	Lab	Quarter Hours Credit
ELN 1130 Two-way Mobile Maintenance	3	6	6

A course to acquaint the student with the theory and maintenance of fixed station and mobile station transmitters and receivers. Except for radio laws, sufficient information will be given to qualify the student to take the FCC second class radiotelephone license examination.
Prerequisites: ELN 1126, ELN 1125.

ENGLISH (ENG)

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-ENG 101 Grammar	3	0	3

Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.

Prerequisite: None.

T-ENG 102 Composition	3	0	3

Designed to aid the student in the improvement of self-expression in business and technical composition. Emphasis is on the sentence, paragraph and whole composition.

Prerequisite: T-ENG 101.

T-ENG 103 Report Writing	3	0	3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. Exercises in developing typical reports, using writing techniques and graphic devices are completed by the students. Practical application in the preparation of a full-length report i required of each student at the end of the term. This report must have to do with something in his chosen curriculum.

Prerequisite: T-ENG 102.

T-ENG 204 Oral Communication	3	0	3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker' attitude. Improving diction, voice, and the application of particular technique of theory to correct speaking habits and to produce effective oral presentation Particular attention given to conducting meetings, conferences, and interviews

Prerequisite: T-ENG 101.

T-ENG 206 Business Communication	3	0	3

Develops skills in techniques in writing business communications. Emphasi is placed on writing action—getting sales letters and prospectuses. Busines reports, summaries of business conferences, letters involving credit, collec tions, adjustments, complaints, orders, acknowledgments, remittances, an inquiry.

ENG 1101 Reading Improvement	2	0	2

Designed to improve the student's ability to read rapidly and accurately Special machines are used for class drill to broaden the span of recognition to increase eye coordination and word group recognition and to train for com prehension in larger units.

Prerequisite: None.

ENG 1102 Communication Skills	3	0	3

Designed to promote effective communication through correct languag usage in speaking and writing.

Prerequisite: ENG 1101.

ENG 1103 Report Writing	2	0	2

Fundamentals of correct language usage applied to report writing. Em phasis is on principles of report construction and application to various repo forms.

Prerequisite: ENG 1102.

INDUSTRIAL SCIENCE (ISC)

		Course Hours per Week		Quarter Hours Credit
		Class	Lab	
T-ISC 201	**Industrial Organization and Management**	3	0	3

Organizational structure for industrial management; operational and financial activities, including accounting, budgeting, banking, credit and industrial risk, forecasting of markets, selection and layout of physical facilities; selection, training and supervision of personnel as found in typical industrial organizations.
Prerequisite: None.

T-ISC 202	**Quality Control**	3	2	4

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance.
Prerequisite: None.

T-ISC 203	**Motion Study**	3	2	4

Types of methods studies and their applications. Process charts, analysis sheets, time study, work simplification, skill and effort rating.
Prerequisite: None.

T-ISC 204	**Value Analysis**	3	0	3

The modern concept in the control of manufacturing production. This course will provide the students an opportunity to study a production system with the specific purpose of identifying unnecessary costs. The objective of the concepts and techniques of value analysis is to make possible a degree of effectiveness in *identifying* and *removing* unnecessary cost by the use of sound decisions through a common sense approach.
Prerequisite: None.

T-ISC 209	**Plant Layout**	3	2	4

A practical study of factory planning with emphasis on the most efficient rrangements of work areas to achieve lower manufacturing costs. Layouts or small and medium-sized plants, layout fundamentals, selection of produc-ion equipment and materials handling equipment. Effective management of men, money and materials in a manufacturing operation.
Prerequisites: T-MEC 201, T-DFT 102.

MATHEMATICS (MAT)

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-MAT 101 Technical Mathematics	5	0	5

The real number system is developed as an extension of natural numbers Number systems of various bases are introduced. Fundamental algebraic operations, the rectangular coordinate system, as well as fundamental trigonometric concepts and operations are introduced. The application of these principles to practical problems is stressed.
Prerequisite: Satisfactory evidence that admission requirements have bee met.

T-MAT 102 Technical Mathematics	5	0	5

A continuation of T-MAT 101. Advanced algebraic and trigonometric topic including quadratics, logarithms, determinants, progressions, the binomia expansion, complex numbers, solution of oblique triangles and graphs o the trigonometric functions are studied in depth.
Prerequisite: T-MAT 101.

T-MAT 103 Technical Mathematics	5	0	5

The fundamental concepts of analytical geometry, differential and integra calculus are introduced. Topics included are graphing techniques, geometri and algebraic interpretation of the derivative, differentials, rate of change the integral and basic integration techniques. Applications of these concept to practical situations are stressed.
Prerequisite: T-MAT 102.

T-MAT 110 Business Mathematics	5	0	5

This course stresses the fundamental operations and their application t business problems. Topics covered include payrolls, price marking, interes and discount, commission, taxes, and pertinent uses of mathematics in th field of business.
Prerequisite: None.

T-MAT 121 Numbering System and Boolean Algebra	4	0	4

A cursory treatment of the base-ten numbering system; functional intr duction to numbering systems with bases other than 10, transformation fro one system to another; fundamental operation in systems other than th decimal; a detailed study of the binary system in relation to machine calc lations; principles of Boolean Algebra and its contribution to digital device and data processing.
Prerequisite: None.

T-MAT 201 Technical Mathematics	5	0	5

A continuation of T-MAT 103. More advanced concepts of differentiatio and integration are considered. Included are graphs and derivatives of th trigonometric functions, exponential and logarithmic differentiation and int gration, advanced integration techniques, polar equations, parametric equ tions and Fourier series.
Prerequisite: T-MAT 103.

	Course Hours per Week Class	Course Hours per Week Lab	Quarter Hours Credit
T-MAT 208 Calculus and Laplace Transforms for Electronics	5	0	5

An investigation of the methods of calculus which are of the most direct use in the study of electronic circuits. Introduction to selected topics from differential equations and Laplace transforms and applications of these methods to the solution of electronic circuit problems.
Prerequisite: T-MAT 201.
Corequisite: T-ELN 214.

	Class	Lab	Credit
T-MAT 214 Statistics	5	0	5

The theory of statistics and its application in modern business. Kinds of regularity that exist among random fluctuations. Experience in associating and using mathematical models to interpret physical phenomena and predicting the outcomes of experiments related to practical business problems.
Prerequisite: T-MAT 102.

	Class	Lab	Credit
T-MAT 215 Statistics	5	0	5

Practical experiences in the statistical solution of business problems hrough the use of computers. Methods of organizing, presenting and interpreting data.
Prerequisite: T-MAT 214.

	Class	Lab	Credit
T-MAT 219 Differential Equations	5	0	5

Methods of solving first-order and simple higher order ordinary differenial equations and linear differential equations with constant coefficients; olution of differential equations by series; and numerical solutions of differntial equations.
Prerequisite: T-MAT 201.

	Class	Lab	Credit
-MAT 225 Numerical Analysis	5	0	5

A development of the mathematical principles upon which many computing methods are based. Topics introduced include theory of errors, numerical ntegration and differentiation, summation procedures, numerical solution of quations, and approximations of various types.
rerequisite: T-MAT 201.

	Class	Lab	Credit
AT 1101 Fundamentals of Mathematics	5	0	5

Practical number theory. Analysis of basic operations: addition, subtracon, multiplication and division. Fractions, decimals, powers and roots, perntages, ratio and proportion. Plane and solid geometric figures used in dustry; measurement of surfaces and volumes. Introduction to algebra used trades. Practice in depth.
rerequisite: None.

	Course Hours per Week Class	Lab	Quarter Hours Credit
MAT 1102 Algebra	5	0	5

Basic concepts and operations of algebra: historical background of ou base-10 number system; algebraic operations: addition, subtraction, multiplication and division; fractions, letter representation, grouping, factoring, ratio and proportions, variation; graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction substitution, graphing; exponents, logarithms, tables and interpolation.

MAT 1103 Geometry	3	0	3

Fundamental properties and definitions; plane and solid geometric figures selected general theorems, geometric construction of lines, angles and plan figures. Dihedral angles, areas of plane figures, volumes of solids. Geometri principles are applied to shop operations.
Prerequisite: None.

MAT 1104 Trigonometry	3	0	3

Trigonometric ratios; solving problems with right triangles, using tables and interpolating; solution of oblique triangles using law of sines and law o cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems.
Prerequisites: MAT 1102, MAT 1103.

MAT 1115 Electrical Mathematics	5	0	5

An introductory algebra course with trigonometry and vectors needed i alternating current: algebraic operations of addition, subtraction, multiplication and division; use of letters and signs, grouping, factoring; exponent ratios and proportions; algebraic and graphic solutions of first-degree equations; introduction to trigonometric functions, their graphs and application to right triangles. Addition, subtraction and resolution of vector quantities.
Prerequisite: None.

MAT 1116 Electrical Mathematics	5	0	5

A working knowledge of the powers of 10, Ohm's Law for series and parallel circuits, quadratic equations, Kirchoff's Laws, trigonometric function plane vectors, alternating currents, vector algebra and logarithms.
Prerequisite: MAT 1115.

MAT 1123 Machinist Mathematics	3	0	3

Introduces gear ratio, lead screw and indexing problems with emphasis o application to the machine shop. Practical applications and problems furnis the trainee with experience in geometric propositions and trigonometric rel tions to shop problems; concludes with an introduction to compound ang problems.
Prerequisite: MAT 1104.

MECHANICAL (MEC)

	Course Hours per Week Class	Course Hours per Week Lab	Quarter Hours Credit
T-MEC 101 Machine Processes	0	6*	2

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.
Prerequisite: None.

	Class	Lab	Credit
T-MEC 102 Machine Processes	0	6*	2

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice. Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed.
Prerequisite: T-MEC 101.

	Class	Lab	Credit
T-MEC 103 Machine Processes	0	6*	2

Modern machine tools of industry. Theory and practice with shaper, slotter, planer, turret lathe, screw machine, grinding and finishing machines. Gear design and the processes of gear manufacturing.
Prerequisite: T-MEC 102.

	Class	Lab	Credit
T-MEC 110 Fundamental Mechanisms	2	4	4

A study of the purpose and actions of cams, cables, gear trains, differen- ials, screws, belts, pulleys, shafts, levers, and other mechanical devices used o transmit or control signals.
Prerequisite: T-PHY 102.

	Class	Lab	Credit
T-MEC 116 Engineering Materials	3	0	3

Study and testing of the properties of ferrous and non-ferrous metals nd plastics, load and strain measurements, behavior of materials under load, ualities other than strength and control of the properties of the materials.
Prerequisite: T-PHY 102.

	Class	Lab	Credit
-MEC 201 Machine Processes	2	6*	4

Newer concepts of work handling and automatic machining process. Chip- ss production and new techniques in metal forming. Analysis of high-energy orming, ultrasonic machining, electrolytic metal removal, chemical milling, imerical controls and simplified building block numerical control systems.
rerequisite: T-MEC 103.

	Class	Lab	Credit
MEC 205 Strength of Materials	3	2	4

Study of principles and analysis of stresses which occur within machine id structure elements subjected to various types of loads such as static, ipact, varying and dynamic. Analyses of these stresses are made as applied thin-walled cylinders and spheres, riveted and welded joints, beams, columns d machine components.
erequisites: T-PHY 106, T-MAT 102.

	Course Hours per Week Class	 Lab	Quarter Hours Credit
T-MEC 210 Physical Metallurgy	3	3*	4

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) structures, methods of designating crystal planes, liquid and vapor phases, phase diagrams, and alloy systems.
Prerequisite: T-PHY 101.

T-MEC 211 Physical Metallurgy	3	3*	4

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization, recrystallization and grain growth, age hardening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations.
Prerequisite: T-MEC 210.

T-MEC 212 Practical Automation	3	2	4

A comprehensive study of automation as it is interpreted and practiced by American industry of today. The fundamentals of automation and its effects in industrial productivity, labor supply and demand, equipment and processes. Students will solve problems encountered while installing an automated system.
Prerequisite: None.

T-MEC 213 Production Planning	3	3*	4

Day-to-day plant direction; forecasting, product planning and control scheduling, dispatching, routing, and inventory control. Case histories ar discussed in the classroom, and courses of corrective action are developed Drafting room layouts for planning and control.
Prerequisite: T-DFT 102.
Corequisite: T-MEC 201.

T-MEC 214 Tool Engineering	3	0	3

An introduction to the problems of tool engineering with emphasis o planning the processes of production, designing and developing the necessar tools, and utilizing available manufacturing facilities; practical analysis an comparison of the use and cost of tools, jigs and fixtures, dies, molds, an gauges as they are utilized in our modern day manufacturing and productio methods.
Prerequisites: T-DFT 102, T-MEC 201.

T-MEC 235 Hydraulics and Pneumatics	3	3*	4

The basic theories of hydraulic and pneumatic systems. Combinations o systems in various circuits. Basic designs and functions of circuits and motor controls, electrohydraulic servomechanisms, plumbing, filtration, accumulato and reservoirs.
Prerequisite: T-PHY 102.

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-MEC 237 Control Systems	2	4	4

Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance, accuracy, applications and their utilization in industrial processes.
Prerequisites: T-PHY 102, T-ELC 201.

	Class	Lab	Credit
MEC 1101 Machine Shop Theory and Practice	3	12	7

An introduction to the machinist trade and the potential it holds for craftsman. Deals primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice.
Prerequisite: None.

	Class	Lab	Credit
MEC 1102 Machine Shop Theory and Practice	3	12	7

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations on the cylindrical grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course.
Prerequisite: MEC 1101.

	Class	Lab	Credit
MEC 1103 Machine Shop Theory and Practice	3	12	7

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder.
Prerequisites: MEC 1102.

	Class	Lab	Credit
MEC 1104 Machine Shop Theory and Practice	3	12	7

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical nd surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry.
Prerequisites: MEC 1103.

	Course Hours per Week Class	Lab	Quarter Hours Credit
MEC 1113 Shop Processes	2	3	3

Study of practices used in metalworking shops: introduction to how materials can be utilized, and to the processes of shaping, forming and fabricating of metals. Demonstration of the metalworking lathes, grinders, drills, milling machines, shapers, planers, saws, broachers, gear cutting machines and finishing machines. A study of the capabilities of these machines.
Prerequisite: None.

MEC 1114 Shop Processes	2	3	3

Comparison of the unit-production and mass-production systems. Casting, forging and allied processes, welding and sheet metal working processes are demonstrated and discussed. Mass-production methods are studied in relationship to precision dimensional control.
Prerequisite: MEC 1113.

MEC 1115 Treatment of Ferrous Metals	2	3	3

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel surface treatments, alloy of special steel, classification of steels, and cast iron will be topics for study.
Prerequisite: None.

MEC 1116 Treatment of Non-Ferrous Metals	2	3	3

Continuation of the study of physical metallurgy. The non-ferrous metals: bearing metals, (brass, bronze, lead), light metals (aluminum and magnesium), and copper and its alloys are studied. Powder metallurgy, titanium zirconium, indium and vanadium are included in this course.
Prerequisite: MEC 1115.

MEC 1120 Duct Construction and Maintenance	3	6	5

Study of various duct materials including sheet steel, aluminum, an fiber glass. Safety, sheet metal hand tools, cutting and shaping machines, fasteners and fabrication practices, layout methods, and development of duc systems. The student will service various duct systems and perform on th site repairs including ducts made of fiber glass. A study is made of duc fittings, dampers and regulators, diffusers, heater and air washers, fans, insulation and ventilating hoods.
Prerequisites: DFT 1116, AHR 1123.
Corequisite: AHR 1126.

NURSING (NUR)

	Course Hours per Week		Contact Hours per Quarter
	Class	Lab	
NUR 1001 Practical Nursing I	28	2	330

Designed to assist students in acquiring the knowledge, understandings, appreciations, and attitudes basic to effective nursing of patients of all ages and backgrounds. Emphasis is on nursing needs arising both from the individuality of the patient and from inability for self-care as a result of a health deviation. Patient-centered studies include analysis of patient needs, both through classroom study of hypothetical patient situations and through planned experiences in the clinical environment. Beginning skills in nursing methods are developed through planned laboratory practice and supervised patient care.

OBJECTIVES: To assist beginning students in practical nursing to acquire basic knowledge from nursing and related subject areas and to begin to develop the skills needed for safe and effective bedside care of patients in a state of dependency due to health deviations.

COURSE MATERIAL: Nursing—History
Introduction to Patient Care
Health—Personal, Physical and Mental
Family
Community
Basic Science—Body Structure and Function
Bacteriology
Basic Nutrition
Vocational Adjustments—Introduction to Ethics
Legal Aspects of Nursing
Communications and Human Relations

rerequisite: Admission requirements.

UR 1002 Practical Nursing II	12	24	396

Designed to introduce the student to deviations from normal, to nursing ethods and therapeutic procedures, and to the clinical specialties. Continued atient-centered study, with introduction of the illness condition as an addi-onal source of nursing needs. Increased emphasis on clinical activities and lected patient care.

BJECTIVES: To assist practical nursing students to acquire further owledge and understanding and to develop further skills needed for render-g safe and effective nursing care to selected patients of all ages.

OURSE MATERIAL: Medical-Surgical Nursing—Patient Care
Therapeutic Methods, including administration of oral medications
Introduction to Maternity Nursing
Introduction to Nursing the Sick Child
Communications and Human Relations

erequisite: NUR 1001.

	Course Hours per Week		Contact Hours per Quarter
	Class	Lab	
NUR 1003 Practical Nursing III	12	24	396

Designed to acquaint the student with common illness conditions, relatec nursing needs and therapeutic methods, and role of the practical nurse ir care of patients with specific conditions. Learning situations are selected tc illustrate commonalities with a wide variety of similar conditions and to promote student awareness of similarities and differences. Clinical practice emphasizes student experience in care of subacutely ill patients with a wid variety of illnesses, correlated with classroom studies insofar as possible.

OBJECTIVES: To assist practical nursing students to acquire knowledge o common disease conditions and to develop beginning skills in rendering nursing care to patients of all ages with specific needs arising from the illnes and/or therapy.

COURSE MATERIAL: Common Medical-Surgical Conditions
Care of the Subacutely Ill Child
Care of Maternity Patients and Newborn Infants with Complications

Prerequisite: NUR 1002.

NUR 1004 Practical Nursing IV	12	24	396

Designed to introduce the student to care of patients with complex nursing needs and to the assisting role of the practical nurse in situations requi ing judgments based on depth of knowledge. Clinical practice includes supe vised care of labor patients and seriously ill adults and children.

OBJECTIVES: To assist advanced practical nursing students to acqui knowledge of needs of seriously ill patients, to develop beginning skills in a sisting the registered nurse and/or physician in complex nursing situation and to make the transition to the role of graduate practical nurse.

COURSE MATERIAL: Needs of the Seriously Ill Patient
Needs of Patients in Immediate Post-Operative Peri
Needs of the Labor Patient
Needs of the Seriously Ill Child
Assuming the Role of Graduate Practical Nurse

Prerequisite: NUR 1003.

PHYSICS (PHY)

	Course Hours per Week		Quarter Hours Credit
	Class	Lab	
T-PHY 101 Physics: Properties of Matter	3	2	4

A fundamental course covering several basic principles of physics. The divisions included are solids and their characteristics, liquids at rest and in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course.
Prerequisite: None.

T-PHY 102 Physics: Work, Energy, Power	3	2	4

Major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas.
Prerequisites: T-MAT 101, T-PHY 101.

T-PHY 103 Physics: Electricity	3	2	4

Basic theories of electricity, types of electricity, methods of production, nd transmission and transforming of electricity. Electron theory, electricity y chemical action, electricity by friction, electricity by magnetism, induction oltage, amperage, resistance, horsepower, wattage, and transformers are najor parts of the course.
rerequisites: T-MAT 101, T-PHY 101.

-PHY 104 Physics: Light and Sound	3	2	4

A survey of the concepts involving wave motion leads to a study of sound, s generation, transmission and detection. The principles of wave motion lso serves as an introduction to a study of light, illumination and the princiles involved in optical instruments. Application is stressed throughout.
rerequisites: T-MAT 101, T-PHY 102.

-PHY 106 Applied Mechanics	5	0	5

Concepts and principles of statics and dynamics. Parallel concurrent and oncurrent force systems in coplanar and noncoplanar situations. Concepts centroids and center of gravity, moments of inertia, fundamentals of netics, and kinematics of velocity and motion.
rerequisites: T-MAT 103, T-PHY 102.

PHY 231 Fluid Mechanics	3	0	3

Fundamental laws of fluid flow and application of these laws to the sizing hot and cold water piping, steam piping, refrigerant piping, air ducts, mps, and fans. Particular emphasis will be directed to calculations of capay, horsepower, and head requirements of pumps and fans; to comparison the several methods of piping and air duct sizing; and to methods of fluid w measurement.
erequisites: T-MAT 103, T-PHY 102.

	Course Hours per Week Class	 Lab	Quarter Hours Credit
PHY 1101 Applied Science	3	2	4

An introduction to physical principles and their application in industry. Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles.
Prerequisite: None.

PHY 1102 Applied Science	3	2	4

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force motion, work, energy, and power.
Prerequisite: PHY 1101.

POLITICAL SCIENCE (POL)

T-POL 201 United States Government	3	0	3

A study of government with emphasis on basic concepts, structure, powers procedures and problems.
Prerequisite: None.

POWER MECHANICS (PME)

PME 1101 Internal Combustion Engine	3	12	7

Development of a thorough knowledge and ability in using, maintaining and storing the various hand tools and measuring devices needed in engin repair work. Study of the construction and operation of components of interna combustion engines. Testing of engine performance; servicing and maintenance of pistons, valves, cams and camshafts, fuel and exhaust systems cooling systems; proper lubrication; and methods of testing, diagnosing an repairing.
Prerequisite: None.

PME 1102 Engine Electrical and Fuel Systems	5	12	9

A thorough study of the electrical and fuel systems of the automobil Battery cranking mechanism, generator, ignition, accessories and wiring; fu pumps, carburetors, and fuel injectors. Characteristics of fuels, types of fu systems, special tools, and testing equipment for the fuel and electrical system
Prerequisite: PME 1101.

PSYCHOLOGY (PSY)

	Course Hours per Week Class	Lab	Quarter Hours Credit
T-PSY 112 Personality Development	3	0	3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

T-PSY 206 Applied Psychology	3	0	3

A study of the principles of psychology that will be of assistance in the understanding of inter-personal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are: employee selection, supervision, job satisfaction, and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene o his adjustment problems as a worker and a member of the general community.

Prerequisite: None.

-PSY 221 Psychology of Color	3	0	3

A study of color, the conscious and unconscious response to combinations f hues, tones and colors as applied to the field of commercial art.

rerequisite: None.

SY 1101 Human Relations	3	0	3

A study of basic principles of human behavior. The problems of the indi- dual are studied in relation to society, group membership, and relationships ithin the work situation.

rerequisite: None.

SOCIAL SCIENCE (SSC)

TSSC 201 Social Science	3	0	3

An integrated course in the social sciences, drawing from the fields of athropology, psychology, history, and sociology.

Prerequisite: None.

T SC 202 Social Science	3	0	3

A further study of social sciences with emphasis on economics, political science, and social problems as they relate to the individual.

Prerequisite: T-SSC 201.

T-SC 205 American Institutions	3	0	3

A study of the effect of American social, economic, and political institutions on the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage.

Prerequisite: None.

SOCIOLOGY (SOC)

	Course Hours per Week		Quarte Hours Credit
	Class	Lab	
T-SOC 207 Rural Society	3	0	3

A study of selected elements of rural sociology with emphasis on curre social changes. The course provides a sociological background for the unde standing of rural social changes. Areas of study include rural culture, grou relationships, social classes, rural and suburban communities, farm organiz tions, the communication of agricultural technology, rural social problem agricultural adjustment and population change.

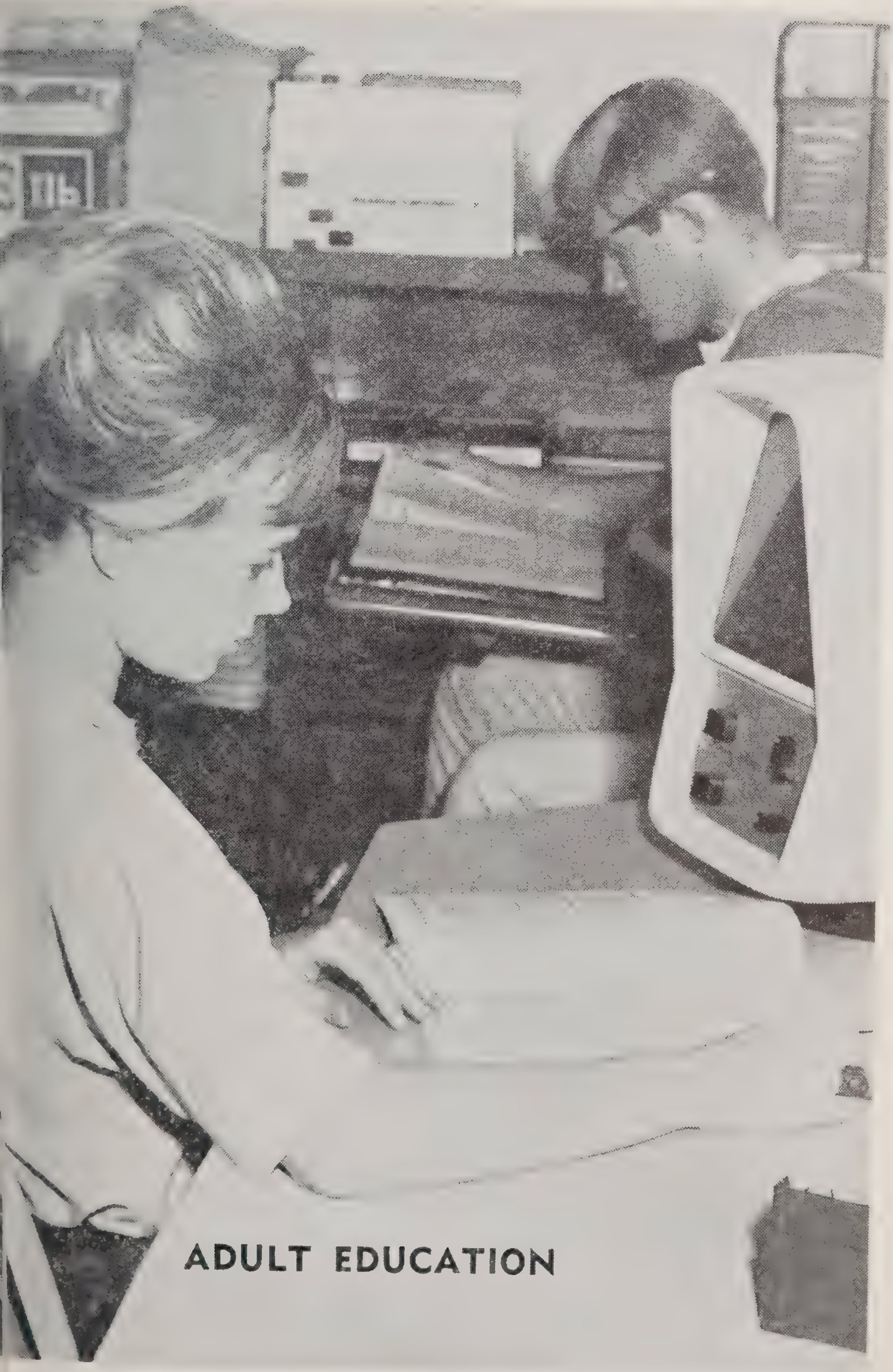
Prerequisite: None.

WELDING (WLD)

WLD 1101 Basic Gas Welding	0	3	1

Welding demonstrations by the instructor and practice by students in t welding shop. Safe and correct methods of assembling and operating t welding equipment. Practice will be given for surface welding; bronze we ing, silver-soldering, and flame-cutting methods applicable to mechanical pair work.

Prerequisite: None.



ADULT EDUCATION

GENERAL ADULT EDUCATION

The General Adult Education Division offers a wide range of progra for adults in general self-improvement and academic training. Courses va in length and type to meet the needs of the students and may be offered at time and place most convenient for the enrollees.

The following are types of courses that may be offered:

Academic
- Elementary, Grades 1-8
- High School, Grades 9-12
- Special Remedial Courses
- College Preparatory Courses
- Advanced Courses

Creative Arts
- Music Theory
- Painting and Drawing
- Art Appreciation
- Art Exhibits
- Speakers Bureau
- Forums on Community Affairs

Parent Education
- Adolescent Behavior
- Pre-school Problems
- Child Psychology
- Maternity Care

Citizenship
- North Carolina History
- American History
- Political Parties
- The Constitution

Language Arts
- American Literature
- Creative Writing
- Group Dynamics
- Public Speaking
- Rapid Reading

Family Life
- Mental Hygiene
- Geriatrics
- Community-Family Relations
- Human Relations
- Exceptional Children

Homemaking
- Dressmaking
- Interior Decorating
- Nutrition
- Landscaping

Foreign Languages
- Conversational French
- Conversational Spanish

Consumer Education
- Family Finance
- Law for the Layman
- Consumer Problems
- Personal Investments

Other courses to help meet the economic and cultural needs of the c munity may be scheduled as local interest requires. Costs of all courses kept to a minimum and will be announced whenever a course is schedule

FUNDAMENTALS LEARNING LABORATORY

The Fundamentals Learning Laboratory provides the adult student the opportunity to pursue his own individualized program of study accord to a schedule which he sets for himself.

Utilizing special programmed materials, the student is able to choose f a wide variety of courses in the language arts, social studies, mathemat and science fields. Under the guidance of a specially trained coordinator, student selects those courses which best serve to meet his own partic needs or interests.

As each student is studying "on his own," he is able to progress as rap as his time and ability permit.

The Laboratory is open both day and night. Total annual instructional is a $2.00 registration fee.

JOB INSTRUCTION
TRAINING

EXTENSION PROGRAMS

EXTENSION PROGRAMS

In an effort to provide instruction which will increase the skills and un standings of present and prospective workers, the Technical Institute offe wide variety of vocational training and upgrading programs. These progr include, but are not limited to, the following:

- Fire Service Training
- Health Occupations Training
- Hospitality Training
- Service Station Training
- Textiles
- Law Enforcement Training
- Agricultural Technology
- Distributive Occupations
- Building Trades
- Mechanics
- Mid-Management Development

Other special programs may be offered to meet the training requirem of a specific business or industrial organization.

Instructors are selected from men who are academically qualified and have demonstrated successful work experience in the subject area to be tau Frequent use of case studies, audio-visual aids, and class participation in a high degree of student interest.

Cost is kept to a minimum. A $2 annual registration fee, and for courses a small supplies or textbook fee, is charged at the time of enrolln

Classes are held both day and night in the modern Technical Inst building. As this is a continuing program, new classes are constantly formed to meet local needs.

MID-MANAGEMENT DEVELOPMENT PROGRAM

Courses offered in the Mid-Management Development Program are designed to assist those managers, supervisors, department heads, foreman, and supervisory trainees in business, industry, and public service agencies who wish to further develop and improve their management capabilities. Courses are approved by the Department of Community Colleges and carry appropriate credit toward the Technical Institute's Mid-Management Development diploma. Certificates are awarded upon satisfactory completion of individual courses.

A partial list of the marketing and management courses offered in this program include the following:

Course Title	Length
Iuman Relations in Management	22 hrs.
'rinciples of Supervision	48 hrs.
dvanced Professional Salesmanship	20 hrs.
rt of Motivating People	22 hrs.
reative Thinking	24 hrs.
eading Improvement	16 hrs.
conomics in Business and Industry	22 hrs.
ffective Writing	22 hrs.
ffective Speaking	16 hrs.
redit and Collections	12 hrs.
onference Leadership	10 hrs.
b Methods	10 hrs.
structor Training	16 hrs.
b Analysis Training	12 hrs.
ork Measurement	22 hrs.
gal Problems in Business	12 hrs.
siness Calculations	12 hrs.
cruitment and Selection of Personnel	16 hrs.
lustrial Safety and Accident Prevention	22 hrs.
st Accounting for Supervisors	12 hrs.
ision-Making Business Games for Management (Computerized and Non-computerized, variable lengths)	

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CATALOG
1968-70

Technical
Institute of
Alamance

TECHNICAL INSTITUTE OF ALAMANCE
1968-69 SCHOOL CALENDAR

FALL QUARTER

Registration	September 3, 1968
Classes Begin	September 4, 1968
Last Day Course May Be Added	September 10, 1968
Last Day Course May Be Dropped Without Penalty	September 25, 1968
Classes End	November 20, 1968
Instructors' Records and Reports	November 21 and 22, 1968

WINTER QUARTER

Registration	November 25, 1968
Classes Begin	November 26, 1968
Thanksgiving Holidays	November 28 and 29, 1968
Last Day Classes May Be Added	December 4, 1968
Last Day Classes May Be Dropped Without Penalty	December 19, 1968
Christmas Holidays	December 23-31, 1968 (Inclu
New Year's Holiday	January 1, 1969
Classes End	February 26, 1969
Instructors' Records and Reports	February 27 and 28, 1969

SPRING QUARTER

Registration	March 3, 1969
Classes Begin	March 4, 1969
Last Day Classes May Be Added	March 10, 1969
Last Day Classes May Be Dropped Without Penalty	March 25, 1969
Easter Holidays	April 4-7, 1969 (Inclusive)
Classes End	May 23, 1969
Instructors' Records and Reports	May 26 and 27, 1969
Instructors' Workshops	May 28-30, 1969 (Inclusive)

SUMMER QUARTER

Registration	June 2, 1969
Classes Begin	June 3, 1969
Last Day Classes May Be Added	June 9, 1969
Last Day Classes May Be Dropped Without Penalty	June 24, 1969
Independence Day Holiday	July 4, 1969
Students' and Instructors' Vacation	July 7-11, 1969 (Inclusive)
Classes End	August 27, 1969
Instructors' Records and Reports	August 28, 1969
Labor Day Holidays	August 29 and September 1, 1969

CATALOGUE 1968-70

411 CAMP ROAD

TELEPHONE 226-6307

BURLINGTON, NORTH CAROLINA 27215

TA
"HE WHO HATH A TRADE -
HATH AN ESTATE"
FRANKLIN

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Students having questions not answered in this publication may secure additional information from The Director of Student Personnel, Technical Institute of Alamance, 411 Camp Road, Burlington, North Carolina 27215. Telephone 226-6307

The Legal and Corporate Name of the Institution is:
"TECHNICAL INSTITUTE OF ALAMANCE"

The provisions of this publication are not to be regarded as an irrevocable c
between the student and the Technical Institute of Alamance. The Institute r
the right to make changes in the regulations, courses, fees, and other mat
policy and procedure as and when deemed necessary. The Institute further r
the right, at any time, to request the student to withdraw when it considers such
to be in the best interest of the institution.

CORRESPONDENCE DIRECTORY

or prompt handling, please address inquiries as indicated below:

eneral Information	Office of the President
usiness Matters	Office of the Business Manager
dmissions, Students Information, d Counseling Services	Office of the Director of Student Personnel
ocational-Technical ograms	Office of the Director of Vocational-Technical Programs
ening Programs	Office of the Director of Evening Programs
neral Adult Education	Office of the Director of General Adult Education

itors are always welcome at the Technical Institute of Alamance. The Administra-
e Offices are open Monday through Thursday from 8:00 a.m. to 10:00 p.m. and
day from 8:00 a.m. until 5:00 p.m. Visitors desiring interviews with members of
staff are urged to make appointments in advance.

A MAP SHOWING THE LOCATION OF THE SCHOOL

CAN BE FOUND ON THE INSIDE BACK COVER.

BOARD OF TRUSTEES

W. Clary Holt (Chairman)
Partner-Attorney
Sanders and Holt

J. Nimrod Harris (Vice-Chairman)
Secretary-Treasurer
Annedeen Hosiery

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White Furniture Co.

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President-Treasurer
Ewing Motors, Inc.

Hubert Green
Industrial Engineer
Burlington Industries, Inc.

J. Robert Holt
Vice-President
The Mebane Company

Mrs. B. Tate Horton
Homemaker

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Engineering Department Chief
Western Electric Co.

Myron Rhyne
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Dr. Carl Sellars
Veterinarian
Sellars Animal Hospital

Elijah Shaw
Welder Operator
Western Electric Co.

D. J. Walker, Jr.
Partner-Attorney
Walker, Harris, and Pierce

ADMINISTRATIVE OFFICERS

William E. Taylor	President
Edwin Barnes	Director of General Adult Education (Acting)
Dillon Cherry	Business Manager
ay N. Easter	Director of Student Personnel
I. Glenn Klutz	Administrative Assistant (Acting)
loyd D. Turnage	Director of Occupational Programs

ADMINISTRATIVE PERSONNEL

ul C. Davis	Extension Director of Adult Basic Education
rs. Effie Lambert	Bookkeeper
rs. Edith Lougee	Student Concessions Supervisor
dgar P. Lynch	Director of Learning Resources Center
car W. Miles	Building and Equipment Maintenance Supervisor
rs. Jerry Nicks	Bookstore Manager

COUNSELORS

rs. Ella Ray Chacey	Counselor
chard E. Davis	Counselor

SECRETARIAL STAFF

Mrs. Dorothy Allred
Mrs. Ann Featherstone
Mrs. Rosa Flynt
Mrs. Nancy Leach
Mrs. Ruth Holloway

Mrs. Betty Owens
Mrs. Betty Powell
Mrs. Delores Qualls
Mrs. Ann Johnson

FULL-TIME INSTRUCTIONAL STAFF

Pedro Alomia	Department Head, Air Conditioning and Refrige
Landon Averitt	Educational Tech
Mrs. Ellen H. Averitt	Secretarial Sci
Mrs. Rebecca M. Baker	Fundamentals Learning Labo
Samuel Bundy, Jr.	Department Head, Business Administ
Edward Bertalan	Engineering Techn
Vernon M. Cheek	Accou
Miss Evelyn Davis	Division Chairman, Health Occup
Gilmer W. Dodson	Department Head, Data Proc
Garvin J. Ducker	Division Chairman,
Miss Frances Durant	Art and Social Sci
R. Wayne Feamster	Division Chairman, Applie
Robert J. Graham	Learning Laboratory and Related S
Terrance Hanner	Data Proc
Jerry L. Harris	Department Head, Che
Julius A. Kimbro	Data Processing and Mathe
Charles W. Lowry	Division Chairman, Business Techn
Mrs. Mildred B. Lynch	Dental Ass
Mrs. Jean H. McMillan	Department Head, Secr
Bobby L. Minnis	Division Chairman, Related Su
James C. Newbold	Department Head, Auto Mec
Harry E. Palmer	Commerci
Mrs. Wanda Palmer	Secretarial and Business Administ
Mrs. Florence Pate	Practical N
James E. Peeples	Department Head, Electronics and Radio a
Mrs. Sue Slaughter	Dental Ass
Rudy H. Smith	Department Head, Mathematics and P
John S. Stewart	Department Head, Drafting and Design — Mech
Ralph Stockard	Elect
Robert Sutton	Data Proc
James G. C. Swinney, Jr.	Division Chairman, Engineering Tech
Arthur Sykes	Department Head, Machinist, Manufact
William L. Tullar	Social S

GENERAL INFORMATION

HISTORY

The Technical Institute of Alamance was established in 1959. Its estab- lhment was part of a state-wide system known as Industrial Education enters. Through the cooperative efforts of the State Department of Trade d Industrial Education and the school systems of Alamance County and rlington, the Burlington-Alamance County Industrial Education Center s begun.

The need for and the development of the Institute has been centered the principle of responsiveness to changing needs and conditions in the a. The expansion of the industrial and technological era in the State has ated many new employment opportunities for technically trained personel. In addition, the right of every individual to have an educational portunity to develop according to one's potential has been recognized.

The initiation of a state-wide system of Industrial Education Centers s begun in 1957 by the allocation of funds by the General Assembly. In 59, the General Assembly officially designated this type of vocational ool as an Industrial Education Center.

nder legislation enacted in 1963, administration of the Industrial ucation Center was transferred to the State Board of Education, Detment of Community Colleges. The local control of the Institution was ted in a board of trustees by the new legislation.

continuance of the principle of responsiveness to changing needs l conditions in the area, the Board of Trustees applied to the State rd of Education through the State Department of Community Colleges become a Technical Institute. The State Board of Education approved change in status to a Technical Institute in January, 1964. Along with approval, authority was granted to award the degree, Associate in plied Science Degree (A.A.S.), in approved programs. In the spring of

1964, the Board of Trustees changed the name of the Institute to Tech Institute of Alamance.

Future development of the Technical Institute of Alamance will, the past, be constantly responsive to the educational and occupation well as culturally oriented needs of the community.

PURPOSE

The purpose of the Technical Institute of Alamance is to meet the cational needs of students and the community alike. In an effort t responsive to these many and varied needs, a variety of curricu offered. Occupationally oriented curricula are provided for those des training for employment in business and commerce, in health-re fields, in skilled trades, and at the technician level in industry. D continual technological advances, it will be necessary to continue off courses that will enable individuals to up-date or to up-grade their

Courses for persons eighteen years old or older who failed to com high school are offered as well as other general adult education co for the social, cultural, and personal development of adults. Educat services—speakers, resource personnel or materials, and special progr will be made available to individuals and organizations as reque

The educational, cultural, and social aspects of the individual's development is encouraged through well rounded curricula, ade facilities and equipment, qualified faculty and student activities.

POLICY OF ADMISSIONS

Through following an "open door" policy of admissions at the Tech Institute of Alamance, it is possible for a high school graduate or a s leaver 18 years old or older needing formal educational opportunity served by the institution.

The "open door" policy does not eliminate the restrictions on admi to specific programs. It does mean that these restrictions will be fle enough under careful guidance to allow a student every reasonable o tunity to prove himself under good teaching. A student will be aff the opportunity to eliminate admission requirement deficiencies thr remedial work, and may remain in the program of remedial work as as he makes satisfactory progress. As soon as a student can meet the sp admission requirements, he may be enrolled in a curriculum. Ref specific department for admission requirements for each program.

Any person who wishes to take a course or program is asked to plete an application form and return it to the Institute. Upon receipt

pplication, the Student Personnel Office will mail promptly to the pro-
ective student instructions regarding admission procedures. Applica-
ons should be submitted well in advance of the beginning of the term
which the student desires to enroll. While students may be processed
the day of registration, an early application assures adequate time
r the processing of the student and enables entry into a program where
rollment may be limited. Candidates are encouraged to apply early
be assured of a place in class. Classes are closed when maximum en-
llment is reached. A student who plans to pursue a diploma or associate
gree must ask his high school or college to submit a transcript of all
evious work undertaken. Prior to registration, candidates may be re-
ested to appear at the Institute for a personal interview and tests.

ACADEMIC INFORMATION

GENERAL ADMISSION INFORMATION

At the Technical Institute of Alamance the “open door” policy provi entrance to any individual who feels that he might benefit from trai and/or services offered.

Counseling services are available to all students, beginning with placement interview and continuing throughout the student’s enrollm Every effort is made to assist students to recognize and to underst their aspirations, educational preparation, interests, motivation and ca objectives. Assistance is available to help each student recognize his stren and weakness in relation to academic programs.

BASICALLY THE APPLICANT:

1. Must be eighteen years of age or older (or a high school gradu to be admitted to the Institute.
2. Must submit an application form.
3. Must have high school (and college) transcript of previous demic work or high school equivalency (GED) scores submit to the Institute.
4. Should report to the Institute for admission counseling appropriate testing for which there is no fee. (Appointm schedules for testing will be mailed as application is process
5. Must be in good or acceptable physical and mental health.
6. Deposit $15. upon acceptance into a curriculum program.

Various degree and diploma programs are open to the student ente TIA. In addition to the basic standards for admission, specific requ ments may apply to certain programs. These specific requirements in the section of the catalogue giving the program description. Early mission of application and meeting placement test schedules will facili acceptance. A deposit of fifteen ($15.00) dollars is due upon receipt of ceptance. The deposit will be applied to the applicant's tuition charges d is not refundable unless covered by the institution refund policy

HEDULE OF CURRICULUM CLASSES

urse Offerings

Shortly before registration day each quarter, the Institute will announce master schedule of courses to be offered. This will generally include those courses required for a student to complete the work as outlined the catalog for his curriculum. In some instances, however, it will be cessary for the Institute to rearrange this sequence of course offerings. ery effort will be made to enable a student to complete his program the minimum possible time. Whenever practical, make-up classes and ecial courses will be offered to those needing them.

sing this master schedule of courses, each student will consult with advisor prior to registration to arrange a class schedule to meet his n particular requirements.

ss Hours

he Institute will normally offer courses from 8:30 a.m. to 10:00 p.m. nday through Thursday and from 8:30 a.m. to 5:00 p.m. on Friday. lents admitted to a curriculum program may, upon the approval heir department head, register for any of these courses. Those students ressing a preference for either the day or the evening program may ect to have their classes scheduled during these periods:

Day Classes:	8:30 - 9:23 a.m.
	9:30 - 10:23 a.m.
	10:30 - 11:23 a.m.
	11:30 - 12:23 p.m.
	12:30 - 1:23 p.m.
	1:30 - 2:23 p.m.
	2:30 - 3:23 p.m.
	3:30 - 4:23 p.m.
	4:30 - 5:23 p.m.
Evening Classes:	7:00 - 7:53 p.m.
	8:00 - 8:53 p.m.
	9:00 - 9:53 p.m.

ISTRATION PERIODS

Institute operates on a quarter system. Registration of new students l curriculum programs occurs at the beginning of the fall quarter in mber. Registration in technologies and selected vocational programs also occur at the beginning of the spring quarter for new students.

Continuing students may consult the Institute calendar for specific of subsequent registration periods.

TRANSFER CREDIT OR ADVANCED STANDING

The Technical Institute of Alamance permits admission with adv standing for transfer students from member institutions of the Carolina Department of Community Colleges, and other recognize approved institutions. Only course grades of "C" or above will be acc Content of such courses must closely parallel these for which cre sought at the Institute.

The Student Personnel Office must approve all transfer credits, pr initial enrollment, and each application for transfer of credit w evaluated according to the individual situation. No quality points w given for transferred credit.

The Technical Institute of Alamance operates on a quality point sy In the computation of a student's average, one quarter hour of work p with a grade of A, B, C, D, or F is given a numerical value of 4, 3, 2 respectively, which is then multiplied by the number of quarter represented by the course. The resulting product is the number of q points earned for the course with the grade received.

The quality point average is determined by dividing the total q points earned in all courses by the total number of quarter credit scheduled including any courses failed.

GRADING AND QUALITY POINT SYSTEM

GRADE		GRADE POINT EQUIVALEN
A—Excellent	93-100	4 quality points for each credit
B—Good	86-92	3 quality points for each credit
C—Fair	78-85	2 quality points for each credit
D—Passing	70-77	1 quality point for each credit
F—Failure	Below 70	0 quality points for each credit

I—Incomplete. This signifies that the student is incomplete in some r or other work assigned by his instructor or that he has an ex absence for the final examination, which will be given him at some date but is otherwise passing. An "I" must be completed satisfac during the first two weeks of the next quarter or it automaticall comes an "F"

W—Withdrawn. This signifies that the student has withdrawn durin first three weeks of the quarter.

VP—**Withdrawn Passing.** This signifies that the student has withdrawn from a course voluntarily with a passing grade during the fourth through the ninth week of the quarter.

VF—**Withdrawn Failing.** This signifies that the student has withdrawn from a course with a failing grade during the fourth through the ninth week of the quarter. This designation means that the grade will not be computed in the quality point average.

—**Failure.** This signifies that the student withdrew from a course with a failing grade during the tenth through the twelfth week, or failed the entire course. Unique cases may be reviewed by the Administration.

All final course grades will be a letter grade in accordance with the opted grading system. Students will receive reports at the end of each arter.

RADUATION REQUIREMENTS

The scholastic point average is determined by dividing the total quality ints earned in all courses by the total number of quarter credit hours eduled, including any courses failed.

UDENT'S RESPONSIBILITY FOR SECURING SPECIAL HELP

t is the student's responsibility to seek out extra help if needed. Instructors available for conferences but will not require that a person come in extra help. In all cases, an instructor will be more than willing to help, it is up to the individual student to ask.

THDRAWING FROM SCHOOL

a student wishes to withdraw for any reason, he should first discuss ith his advisor; second, report his decision to the Student Personnel ce; third, obtain a clearance form that will be signed by each subject uctor, including the librarian and the general office. The failure do this may result in the withholding of all information in the stu-'s file by the Director of Student Personnel.

DITIONAL COURSE WORK

he contact hours for each curriculum are minimal. It is a policy of institution to permit students to enroll in additional courses and/or ratory work beyond those shown in the catalog.

When in any quarter the total weekly contact hours listed are fewer t twenty-five hours in a technical curriculum and fewer than thirty hours vocational trade curriculum, a student may enroll on request for additi instructional hours deemed by the institution to be consistent with program and appropriate to the student to make up twenty-five h per week in a technical curriculum or sufficient hours of attendanc make up thirty hours per week in a vocational trade curriculum.

RESIDENCY REQUIREMENTS FOR GRADUATION

Candidates for a diploma or degree are normally expected to comp one-half of their course work at this institution. Special cases will be g consideration beyond the aforementioned.

SPECIAL STUDENTS

Special students are those who are enrolled for course credit but in a curriculum leading to the diploma or the associate degree. Stu enrolled in this status will normally be required to meet the prerequi for the course or to demonstrate a necessary level of competence b appropriate test. Students enrolled on this basis must do so thr arrangement with the Student Personnel Office.

PROVISIONAL STATUS

Students who have not completed placement tests or lack sufficient for their file may be classified as provisional students. Those students o status must complete all admission requirements following actual enroll

COURSE AUDIT

A student may elect to audit a course. Those auditing receive no c and do not have to take any examination; otherwise, participatio class is on the same basis as a credit student. A student who has previ audited a course is ineligible for credit by examination. The fee for a ing is the same as the fee for credit.

COURSE LOAD

Students enrolled for 12 or more credit hours are classified as full students. Those taking less are classified as part time. Normal course will vary from one curriculum to another and should be carefully pla with the Faculty Advisor. A student may enroll for maximum load de ing upon his capability as determined by his Faculty Advisor. A n course load is outlined by Departments in this catalogue.

PPLICATION FOR DEGREE OR DIPLOMA

Students are required to apply as candidates for the diploma or the egree. This must be completed during the first two weeks of the last uarter of school attendance. This insures that the candidate's record ill be properly reviewed, and that he will be notified of any deficiencies.

RANSCRIPTS

The Student Personnel Office furnishes transcripts with a written request d a fee of $1.00 which is required for each transcript. The first transcript free.

UDENT DEFERMENT

The Selective Service makes provisions for those students who meet cern requirements to be deferred. The first requirement is enrollment in full time curriculum program (minimum 12 credit hours), and the ond one is satisfactory progress in the program.

ASS ATTENDANCE AND REGULATIONS

gularity of class attendance is expected of all students. With each abnce a student incurs the loss of some educational value.

e following rules governing class absences will be strictly and fairly forced:

1. A student will not be penalized if absences do not exceed the number equal to the credit hours of the course. Days before and following legal holidays and vacation constitute two absences for each credit hour missed.

2. Each student is urged to use these absences *only* for the following reasons:
   (a) Illness of the student.
   (b) Death of a member of the immediate family (Parents, siblings, grandparents).

   When a student exceeds the allowed number of absences for a course, *he may be dropped by the instructor and the registrar will be notified.*

3. When an absence occurs on a day of a test, permission to take a a make-up test will be granted at the discretion of the instructor. Students are responsible for arrangements of make-up tests within one week following an absence.

4. Students are responsible for obtaining all assignments and
covered during an absence.
5. A student should report illness in excess of one day to the Stu
Personnel Office.
6. Three tardies are counted as one absence. The first ten mi
of class constitutes a tardy; time thereafter is considered an abs
7. Cases involving unusual circumstances may be reviewed b
student affairs committee. *(Written request must be initiate*
the student to the chairman of this committee).
8. In cases when the instructor is not in class and other arr
ments have not been made, the students are automatically
missed after ten minutes. A roll must be signed by the stu
present and turned in by one of them to the General C

ACADEMIC PROBATION AND DISMISSAL

A student must achieve a cumulative quality point average of at
2.0 in order to graduate. Failure to achieve a 2.0 quality point average (
at the end of any quarter (for that quarter) will result in the st
being placed on academic probation. The student will be notified
probationary status by letter and *will be required* to schedule pe
conferences with a counselor or advisor.

A student on probation may remain in his program as long as his s
quent quarter's QPA meets the minimum of 1.50. If the subse
quarter's work should fail to meet this minimum, the student may
quired by his Department Head to drop certain courses or change
culum, and/or take remedial work, or the Department Head may r
mend dismissal to the Student Affairs Committee. A student will b
missed from the school only if it is evident that he is unable to ma
progress after all possible alternatives are exhausted.

Re-admittance at a subsequent quarter will be at the discretion
Student Affairs Committee. Students may appeal a decision of th
partment Head by letter to the Student Affairs Committee. De
of the Student Affairs Committee may be appealed by letter
Board of Trustees via the President of the Institute.

SUSPENSION AND DISMISSAL

Students will be expected to conduct themselves at all times a
viduals of prudence and maturity. The rights and feelings of othe
be respected. Students shall demonstrate a high regard for school fa
and property and for the personal property of others.

School regulations which serve to control such activities as vehicular affic and parking, smoking, and other aspects of personal conduct must observed. Students may be suspended or dismissed for conduct which considered incompatible with standards of propriety and good judgent.

Re-admittance of dismissed students at a subsequent session will be the discretion of the President. Students may appeal a suspension or missal decision by letter to the Board of Trustees via the President.

NORS

raduating students who earn a Quality Point Average of 3.5 during the urse of study will receive a degree or diploma with honors. Graduating dents with the highest overall grade point average in both the associate gree and diploma programs will be given special recognition at the duation exercises.

URSE NUMBERING SYSTEM

he following system established by the Department of Community eges is used in designating the courses offered by the Institute.

1. Each course is indicated by a three-letter prefix designating the general subject area. The prefix for technical courses will be preceded by the letter "T".
2. A number follows the letter prefix to indicate a specific course within an area according to the following rules:

    Vocational courses are assigned numbers within the range of 1000 to 2000.

    Technical courses are assigned numbers within the range of 100 to 300.

    Adult Education courses beyond the high school level are assigned numbers within the range of 2000 to 3000.

    Special courses developed by the Institute for curriculum programs will be indicated by the letter "S" following an appropriate prefix and number chosen according to the above rules.

The Following is a List of the Abbreviations Used as Prefixes:

Air Conditioning, Heating & Refrigeration	AHR
Art	ART
Automotive	AUT
Business	BUS
Chemistry	CHM
Commercial Art	CAT
Cybernetics	CYB
Dental	DEN
Drafting and Design	DFT
Economics	ECO
Electrical	ELC
Electronic Data Processing	EDP

Electronics	E
English	E
Industrial Science	IS
Mathematics	M
Mechanical	M
Nursing	N
Philosophy	P
Physics	P
Power Mechanics	P
Political Science	P
Psychology	P
Sociology	S
Social Science	S
Welding	W

EXPENSES AND FEES

ENERAL INFORMATION

n keeping with its philosophy, the Technical Institute of Alamance
ks to provide quality education and training at the lowest cost possible.

he state and federal governments provide funds for equipment and
ices.

he local board of county commissioners provides funds to acquire
d, erect buildings, and to maintain and operate the buildings.

he distribution of operating costs are shared approximately as follows:

State	79%
Local	8%
Student	13%

e thirteen percent of cost assumed by the student is through the
ment of tuition and fees.

UTION AND FEES

uition and fees for each quarter are payable on or before the date of
tration.

checks and money orders should be made payable to Technical
tute of Alamance. A check given in payment of expenses which is
ned by the bank creates an indebtedness to the Institute and jeopard-
s the student's enrollment.

y student who is unable to make payment at the time of registration
s make special arrangements with the Business Manager to pay out-
ing balance of tuition and fees within the first week of classes.
onger extension of time is needed a student must assure payment of
utstanding balance of tuition and fees. A promissory note will meet
equirement; however, parents or guardians must execute notes for stu-
t under twenty-one years of age.

A student is not eligible to re-register who has an outstanding bal due for fees and tuition incurred in any previous quarter, unless adeq security is given. This includes any outstanding balance at another ins tion of the Community College System.

A student will not be allowed to graduate, receive a diploma or ficate, or a transcript of his record, nor will any information conce his record be forwarded to any other institution or other person as lo an account is outstanding.

The student should arrange well in advance to pay all necessar penses on the day of registration.

CURRICULUM PROGRAM ADVANCE REGISTRATION FEE

When an applicant is officially notified of admission to a cour study, he is required to make a $15.00 deposit upon notice of accep which assures entry into that program. This deposit is applied t tuition charge upon registration for the first quarter and is not refun unless covered by the institution's refund policy.

TUITION—NORTH CAROLINA RESIDENT

The formula for equating credit-hour equivalency with credit hou the purpose of assessing tuition charges is as follows:

1 class hour — 1 credit hour
2 laboratory hours — 1 credit hour
3 shop hours — 1 credit hour

Credit Hour
Equivalency X $2.50 = tuition per quarter with a maximum of for technical and vocational curriculum students.

FULL-TIME STUDENTS

All vocational, technical, special, and audit students who are en for thirteen (13) or more credit hours are charged a maximum of per quarter; however, students enrolled for 12 credit hours or mo full-time students.

PART-TIME STUDENTS

The tuition charge for curriculum credit students (and audit stu is $2.50 times the number of credit hours for which the student is en Example: 9 credit hours X $2.50 = $22.50.

TABLISHMENT OF RESIDENCY

student who is not a legal resident of North Carolina must pay non- ident tuition. A person twenty-one years of age or older is not deemed gible for the resident rate of tuition unless he has established and ntained his legal residence in North Carolina for at least six months nediately preceding the date of his first enrollment in the Technical itute of Alamance. The legal residence of a person under twenty-one rs of age at the time of his first enrollment in the Technical Institute of mance is that of his parents, surviving parent, or legal guardian. If parents are divorced or legally separated, the legal residence of the er will be considered the residence of the student unless custody of minor has been awarded by court to the mother or to a legal guardian r than a parent. No claim of residence in North Carolina based upon residence of a guardian will be considered if either parent is still g, unless the action of the court appointing the guardian precedes the ent's first enrollment at the Technical Institute of Alamance by at least ve months.

hen the resident status of a student is determined at the time of his enrollment, it may not thereafter be changed except (a) in the case non-resident minor student whose parents subsequently establish residence in North Carolina; and (b) in the case of a resident student, s parents, who cease to be residents of North Carolina.

e legal residence of a wife follows that of her husband except that man student enrolled in the Institute as a resident may continue as ident, even though she marries a non-resident.

e does not acquire the status of a resident of North Carolina by reason ing stationed in the State while in military service.

nership of property, payment of state or local taxes, or registration automobile in the state, apart from legal residence, will not qualify r the resident rate of tuition.

dents who are in doubt as to their status as a resident should request ication by writing to or consulting the Business Manager before ration.

OF-STATE TUITION (Non-Resident)

student whose legal residence is outside of North Carolina will ition fees two and one-half times the in-state resident rate. Students with relatives in this state whose parents or guardian live outside Carolina will pay tuition fees two and one-half times the in-state nt rate.

FULL-TIME NON-RESIDENT

Non-resident students taking thirteen (13) or more credit hours of will be charged a maximum of $80.00 per quarter tuition for vocation technical curriculum programs.

PART-TIME NON-RESIDENT

Those taking twelve (12) or less credit hours of work per quarter w charged $6.25 times the number of credit hours enrolled.

Audit and Special Students, who are non-residents, will be charg the same rate as the non-resident curriculum student.

ACTIVITY FEE

An Activity Fee of $1.00 per quarter is required of all curri students enrolled for twelve (12) or more credit hours. The fee is ch at the beginning of each quarter and is payable by both resident an resident students. These fees are to be used at the discretion of the S Council for such purposes as a school newspaper, dances, picnic This fee is not refundable.

CURRICULUM PROGRAM LATE REGISTRATION FEE

To prevent or reduce the problems incident to late registration, re tion schedules are set for specific days and certain definite procedu required.

A student has not completed registration until all of the re steps are taken. It is the student's responsibility to seek and then to the necessary procedures.

Any student who fails to complete registration for all classes make the required payment of expenses and fees on the pres registration day according to the official school calendar will be c a late registration fee of $5.00. This applies to all curriculum st with no exception—day, evening, full-time, part-time, special, and enrollees.

Those with anticipated financial difficulties should contact the pe office, in person, well in advance of the registration deadline.

REFUND POLICY

Tuition refund for students shall not be made unless the stud in the judgment of the institution, compelled to withdraw for unav

sons. In such cases, two-thirds (2/3) of the student's tuition may be re-
ded if the student withdraws within ten (10) calendar days after the
day of classes as published in the school calendar, provided the stu-
t completes the "Request for Refund" form within thirty (30) days after
ially withdrawing from school. Tuition refunds will not be considered
r that time. Tuition refunds will not be considered for tuitions of Five
lars ($5.00) or less, unless a course or curriculum fails to materialize
to no fault of the student. EXCEPTION: Those students who are
rans or war orphans receiving benefits under U. S. Code, Title 38,
pter 33 and 35 may be refunded the *pro rata* portion of the tuition
not used at the time of withdrawal of such students.

ere is no refund on payments for activity fees, insurance premium
and special fees such as late registration.

all refund cases, the student must initiate his withdrawal through
Student Personnel Office. The Business Office will make the allowable
id only after written request has been received from the Personnel
e with approval by the Director of Student Personnel and the
ent's Department Head.

KS AND SUPPLIES

of the student's necessary textbooks can be acquired from the Insti-
bookstore. Drawing supplies, slide rules, nursing caps, nurses and
l assistant pins are also available in the bookstore; however, composi-
ooks, pens, pencils, decals and other miscellaneous items are sold
snack bar in the student lounge.

bookstore is operated on a strictly cash basis and there is no re-
on books or supplies. It would be to the student's advantage to meet
class at least once before attempting to purchase texts and materials.
ne textbooks cost as little as $1.25 and others as much as $15.00,
ne average cost of each book is approximately $8.00. Most students
ll anticipate spending an average of approximately $40.00 per quarter
oks, supplies, and materials. The total cost varies according to the
ilar program. The nursing, drafting and commercial art programs
special items and/or instructional kits which may vary from
tr to quarter.

DRM DEPOSIT (Nursing Students Only)

ing students are required to make a $20.00 uniform deposit payable
General Office during the first quarter.

uniform deposit entitles each nursing student to the use of three
of uniforms and two (2) caps. (Caps are sold in the Institute's book-
licensed practical nurses who have graduated from the Technical
te of Alamance.)

Should the student complete the requirements for graduation a turn all uniforms in satisfactory condition, the $20.00 may at the r of the student, be paid to the State Nursing Board to cover the re cost of taking the examination which enables practical nurses to b licensed. This deposit is refundable to those who leave school and re uniforms in satisfactory condition.

INSURANCE

Accident insurance, covering hours in school and transportation from school, is available for $2.50 per year. Students desiring this ins may make payment to the General Office after registering for th Quarter and at other designated times. It is not refundable.

Neither the Institute nor the State of North Carolina carries ins to cover any student for accidents or otherwise. Therefore, stude rolled in all shops and labs are particularly urged to take advan this insurance.

TYPICAL FALL QUARTER EXPENSES

	N. C. Resident	Non-R
Tuition	$32.00	$ 8
Activity Fee	1.00	
Insurance (Optional)	2.50	
Books and Supplies (Estimate)	40.00	4
TOTAL	$75.50	$12

TYPICAL SPRING QUARTER EXPENSES

	N. C. Resident	Non-R
Tuition	$32.00	$ 8
Activity Fee	1.00	
Books and Supplies	40.00	
TOTAL	$73.00	$1

Students in the curriculums or programs listed below will ha tional expenses as indicated:

Practical Nursing—$20.00 (Uniform Deposit)—1st Quarter
Commercial Art—$50.00 (Drafting Kit & Supplies)
Drafting—$30.00 (Drafting Kit & Supplies)

TRANSCRIPT FEE

After the initial transcript is issued, a $1.00 fee will be charged subsequent transcript.

TUDENT ERVICES

ERAL PHILOSOPHY

dent services are an integral part of the educational program of the
nical Institute of Alamance.

e main purpose of these services, individually and collectively, is
cilitate the educational process of the student. In support of this
the student services are organized to assist students in moving from
evel of achievement to another.

dent services include various forms of assistance through counseling,
g, orientation, and placement. Various student affairs, such as hous-
inancial aid, part-time work, the supervision of extra-curricular activi-
nd student council are also included within the framework of these
es. Emphasis by counselors is placed on self-understanding, personal
h and assistance in achieving economic self-sufficiency in a job
ably appropriate to abilities and satisfying to individual interests.

philosophy of Student services is based on these purposes in a
ly atmosphere so that personal integrity and group morale will be
ved and enhanced.

NSELING AND TESTING SERVICE

ognizing that every person is an individual and unique in aptitudes,
ality, and ambition, a counseling service is provided for students
esire assistance with vocational, educational, and related matters.
luals of the community are invited to seek this service if they de-
obtain assistance in the attainment of personal goals. Testing is
ed at no cost to the student when information is desired and needed
tude, temperament, achievement, and vocational interest. Individuals
couraged to avail themselves to these services.

PLACEMENT SERVICE

Employment opportunities are made available as another ser
the institution. Prospective employers visit the campus to recruit
institution. Students are assisted in making contacts with future em
Information is available regarding trends of employment, data
salaries, and a file kept up-to-date on prospective employers and e
ment.

The Student Personnel Office, however, does not guarantee empl
The objective of this service is to guide and assist the student in ob
the type of position for which he has been best qualified.

STUDENT HOUSING SERVICE

The Institute does not have dormitory facilities; however, a
list of Burlington residents offering housing facilities may be o
upon request. Costs will vary between $8 to $16 per week accor
livability and convenience. The Institute staff will be happy to
limited assistance when possible in aiding to make adequate pre
for housing.

FACULTY ADVISOR SYSTEM

The advisor system is a cooperative effort of the advisor and the
Personnel Office.

At the time of enrollment, each student is assigned a faculty
The purpose of the advisor is to assist students in planning their p
and selecting courses so that appropriate progress will be realize
student is expected to be fully responsible and cognizant of his s
his program in relation to standards of the institution.

FINANCIAL AID SERVICE

Assistance is made available to students in meeting their f
needs for school attendance. Where possible, this is done through a
of financial aid which may include several forms of assistance.

The Institute serves as a referral and information agency for the f
resources:

A. Veterans Benefits
B. Social Security Agency
C. Department of Public Welfare
D. Employment

The Institute serves students directly as a disbursing agency for the lowing:

- A. Scholarships
- B. Work Study Programs
- C. Loans
  - 1. College Foundations
    - A. Insured Loan Program
    - B. Bryan Foundation
    - C. Picket and Hatcher Foundation
  - 2. Nursing Student Loans

Students must be accepted before application is made for financial aid. The financial aid program is generally based on need and scholarship. Applications for financial aid may be obtained from the Student Personnel Services Office. Since there is time involved in processing of an application, advanced planning must be made.

TERANS EDUCATION BENEFITS

ne Technical Institute of Alamance is approved by the Veterans inistration for students who are eligible under the law. Eligible ons for benefits are urged to take advantage of the guidance service educational facilities of the Institute. Veterans and dependents or ents who expect to enroll under the War Orphans Educational Assistance should contact their Veterans Service Office in advance of registration.

For veterans enrolled under the G. I. Bill, in order to receiv benefits, are required to carry a full load of class work. The contact shown in the catalogue are minimal. It is a policy of this Institute t mit students to enroll in additional subjects and laboratory work b those shown in the catalogue in order to broaden their training.

STUDENT LOUNGE

The Student Lounge is located centrally in the building and is to all students as a place for relaxation and refreshments. A vari soft drinks, along with coffee, candy, and sandwiches are availa the snack bar.

IBRARY

earning to appreciate and use the library is an important part of every vidual's education. The Technical Institute of Alamance recognizes as a significant factor in all of its programs. Every effort has been e to supply the best possible resource material and a competent staff eet these needs for the student, the faculty, and the community.

e collection of books and materials is open-shelf and open-stack. easy access to books fosters an informal working atmosphere which urages the student to read and study. Students, who are urged to take tive in reading and research, find an environment where they see knowledge is not confined to disciplines or compartments but nues from one field to the next. In this situation, students usually more quickly when they can turn readily from the examination of ook to the examination of others related to their immediate interest.

e book collection includes about 12,500 volumes of books and hlets representing the curriculum. Some of the books are:

Books comprising the core collection and supporting the curriculum.

Books on the periphery of the curriculum which are of serious, general interest.

Books of supplementary reference value such as general histories or biographies.

A representative collection of fiction, short stories, and plays.

subscribes to approximately over one hundred well-chosen periodi- hich represent and support the curriculum. Those which are indexed der's Guide and the Applied Science and Technology Index, are each year for permanent use. The student will find the bound icals useful in locating the most recent information on a particular

The class instructor is the person best qualified to introduce the st
to the literature of his particular field; however, the library pr
orientation on how to find and use books. Students are urged to a
help when they feel the need of it.

ROGRAMS
F STUDY

Technical Institute of Alamance offers the following programs of
:

CIATE IN APPLIED SCIENCE DEGREE PROGRAMS

pplied Art

- Commercial Art and Advertising Design

usiness Technologies

- Business Administration
- Business Data Processing
- Medical Secretary
- Scientific Data Processing
- Technical Secretary

ngineering Technologies

- Air Conditioning and Refrigeration
- Chemical
- Drafting and Design Technology
- Electromechanical
- Electronics
- Manufacturing

MA PROGRAMS

alth Occupations

- Dental Assisting
- Practical Nursing

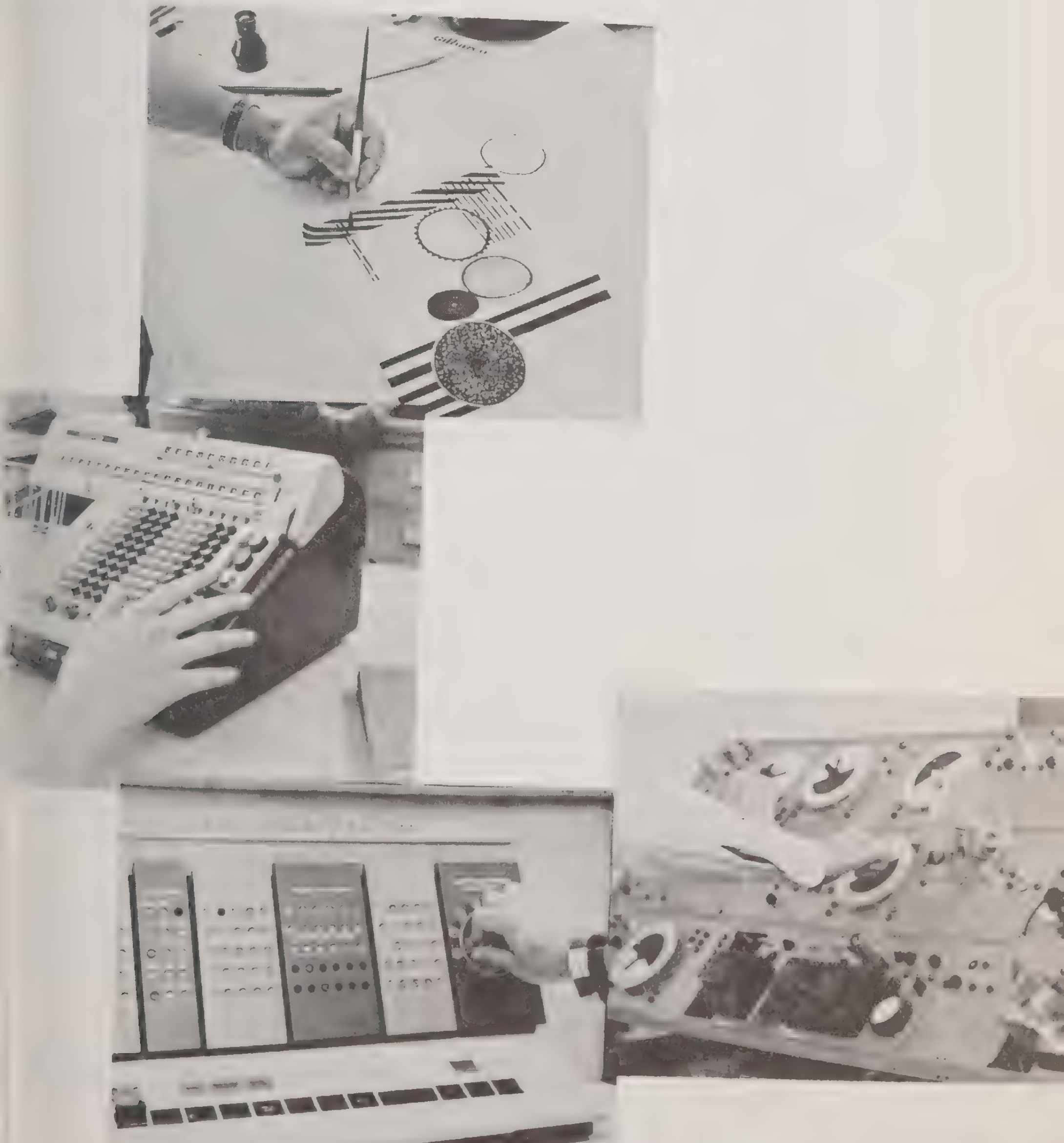
Mechanical Occupations

Air Conditioning and Refrigeration Mechanics
Automotive Mechanics
Mechanical Drafting

CERTIFICATE PROGRAMS

Adult Basic Education
Community Services
General Adult Education
Industrial Services
Special Education

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS



ASSOCIATE DEGREE PROGRAMS

(TWO YEARS)

ADMISSION REQUIREMENTS

NIMUM ADMISSION REQUIREMENTS

uirements for admission of a candidate to the two-year associate degree grams include the following qualifications. The candidate:

1. Must be a high school graduate or have a State-approved equivalent education.
2. Must submit the transcripts of high school and post-high school education.
3. Must demonstrate aptitude for desired training as determined by standard tests.
4. Must be in acceptable condition of physical and mental health. Medical examination may be required at the discretion of the administration.
5. May be required to have an interview with a designated representative for discussing enrollment plans and lifetime career goals.

dition to the above minimum admission requirements, more specific quisites are necessary in some programs.

units of Algebra or one unit of Algebra and one unit of Plane Geometry quired in the following programs:

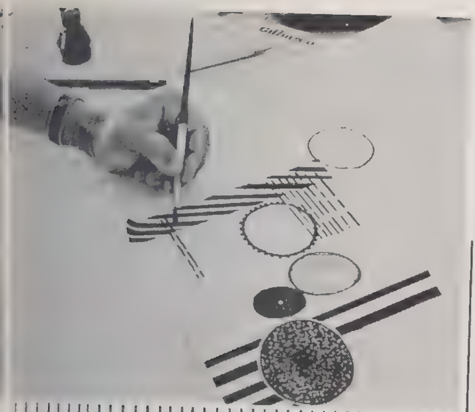
ir Conditioning and Refrigeration Technology
usiness Data Processing
hemical Technology
rafting & Design Technology

lectromechanical Technology
lectronics Technology
anufacturing Technology
ientific Data Processing

ggested that students should have completed one unit of physical with laboratory.

es are available at the Institute for removal of academic deficiencies.

COMMERCIAL ART AND ADVERTISING DESIGN



COMMERCIAL ART AND ADVERTISING DESIGN

pose of Curriculum

rveys have shown an increase in the demand for graduates possessing
ing in the field of Commercial Art and Advertising Design. This cur-
lum will prepare a graduate with a sound, well-rounded background for
nical and creative achievement throughout his professional life. Design
illustration for commerce is continually advancing its standards, there-
the background offered the student must be well-developed to prepare
for performance on a contemporary professional level. Graduates of this
gram will have an adequate background in illustration, layout and letter-
design, and production enabling them to be employed in some facet of
mmercial Artistry.

quipped with professional competence and the potential for continuing
th and improvement, graduates are qualified for employment in ad-
sing agencies, design studios, department stores, industrial advertising
rtments, government agencies, newspapers, television studios, printing
publishing houses.

Description

e commercial artist or advertising designer creates and designs layouts
illustrations for printing, creates posters, signboards, billboards, and
cards. He may design and prepare charts, diagrams, sketches, and
for publication and exhibition, perform responsible illustrative work
ackage design, photography, lettering, and art work for the printing
esses. Opportunities for graduates of this program may be in advertising
ries, newspapers and magazines, television studios, industrial advertis-
partments and design studios, department stores, government agencies,
printing and publishing houses.

Minimum Admission Requirements

Requirements for admission of a candidate to the two-year associate gree in the Commercial Art program includes the following qualificat The candidate:

1. Must be a high school graduate or have a State-approved equiv education.
2. Must submit the transcripts of high and post-high school educa
3. Must demonstrate aptitude for desired training as determine standard tests. These tests will aid in student selection, placer and guidance. Institution guidance and counseling will be avai to the student throughout his education, not just at the time enrollment.
4. Must be in acceptable condition of physical and mental he Medical examination may be required at the discretion of administration.
5. Must have an interview with a designated representative for cussing enrollment plans and lifetime career goals.
6. Must submit a demonstration of his artistic ability in work scribed by the Institute.

It is suggested that students should have completed one unit of phy science with laboratory.

Facilities are available at the Institute for removal of acad deficiencies.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE	
First Quarter	C
T-ENG 101 Grammar	3
T-DFT 101 Technical Drafting	0
T-CAT 101 Advertising Principles	3
T-CAT 105 Life Study	2
T-CAT 121 Commercial Art and Advertising Design	3
	11

Second Quarter	C
T-ENG 102 Composition	3
T-DFT 102 Technical Drafting	0
T-MAT 110 Business Mathematics	5
T-CAT 106 Life Study	0
T-CAT 122 Commercial Art and Advertising Design	3
	11

OURSE TITLE

hird Quarter

	C	L	CH
-ENG 103 Report Writing	3	0	3
CAT 110 Industrial Illustration	2	6	4
-CAT 116 Photography	2	6*	4
-CAT 123 Commercial Art and Advertising Design	3	9*	6
	10	21	17

ourth Quarter

	C	L	CH
ENG 204 Oral Communications	3	0	3
CAT 205 Advertising Copywriting	3	0	3
CAT 212 Advertising Illustration	1	3*	2
CAT 224 Commercial Art and Advertising Design	3	9*	6
ective			4
	10	12	18

th Quarter

	C	L	CH
ial Science Elective	3	0	3
AT 213 Advertising Illustration	1	3*	2
AT 217 Photography	2	6*	4
AT 225 Commercial Art and dvertising Design	3	9*	6
ctive			4
	9	18	19

h Quarter

	C	L	CH
ial Science Elective	3	0	3
AT 214 Advertising Illustration	1	3*	2
AT 226 Commercial Art and dvertising Design	3	9*	6
AT 235 Advertising Art Direction	5	0	5
tive			3
	12	12	19
Total			108

umulative laboratory" involves development of skills and job proficiency. Credit of quarter hour for each three hours of laboratory.

Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr

ELECTIVES

Electives for the **Commercial Art & Advertising Design Curriculum** will be from the following courses. The school may determine which of these are to be in any given quarter of the program.

	C
T-ART 1065 History of Art I	
T-ART 1075 History of Art II	
T-BUS 232 Sales Development	
T-CAT 231 Painting with Polymers	
T-ENG 206 Business Communication	
T-PSY 221 Psychology of Color	
T-SSC 201 Social Science	
T-SSC 202 Social Science	
T-PSY 206 Applied Psychology	
T-ECO 102 Economics	
T-SSC 205 American Institutions	
T-POL 201 United States Government	

BUSINESS TECHNOLOGY

BUSINESS ADMINISTRATION

pose of Curriculum

North Carolina the opportunities in business are increasing. With the asing population and industrial development in this State, business become more competitive and automated. Better opportunities in ness will be filled by students with specialized education beyond the school level. The Business Administration Curriculum is designed to are the student for employment in one of many occupations common to ness. Training is aimed at preparing the student in many phases of nistrative work that might be encountered in the average business. he specific objectives of the Business Administration Curriculum are to lop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding our economy through study and analysis of the role of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.
4. Understanding and skill in effective communication for business.
5. Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

Description

graduate of the Business Administration Curriculum may enter a y of career opportunities from beginning sales person or office clerk to ger trainee. The duties and responsibilities of this graduate vary in ent firms. These encompassments might include: making up and filing s, tabulating and posting data in various books, sending out bills, ing calculations, adjusting complaints, operating various office ma-, and assisting managers in supervising. Positions are available in businesses such as advertising; banking; credit; finance; retailing; w saling; hotel, tourist, and travel industry; insurance; transportation; communications.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C
T-ENG 101 Grammar	3
T-BUS 115 Business Law	3
T-Bus 102 Typewriting I	2
T-MAT 110 Business Mathematics	5
T-BUS 101 Introduction to Business	5
	18

Second Quarter	C
T-ENG 102 Composition	3
T-Elective	3
T-BUS 120 Accounting	5
T-ECO 102 Economics	3
T-BUS 116 Business Law	3
	17

Third Quarter	C
T-ENG 204 Oral Communication	3
T-BUS 121 Accounting	5
T-ECO 104 Economics	3
T-EDP 103S Concept of Data Processing	4
T-BUS 110 Office Machines	2
	17

Fourth Quarter	C
T-ENG 103 Report Writing	3
T-BUS 239 Marketing	5
T-BUS 123 Finance	3
T-BUS 272 Supervision	3
Business Elective	3
	17

Fifth Quarter	C
T-ENG 206 Business Communication	3
T-BUS 243 Advertising	4
T-BUS 235 Business Management	3
T-BUS 124 Finance	3
T-Social Science Elective	3
	16

ixth Quarter

	C	L	CH
BUS 229 Taxes	3	2	4
BUS 271 Office Management	3	0	3
BUS 232 Sales	3	0	3
Social Science Elective	3	0	3
Business Elective	6	0	6
	18	2	19
Total			108

ELECTIVES

Electives for the **Business Administration Curriculum** may be selected from the lowing courses. The school may determine which of these are to be offered in any en quarter of the program.

BUSINESS ADMINISTRATION

URSE TITLE	C	L	CH
US 247 Business Insurance	3	0	3
US 219 Credit Procedures and Problems	3	0	3
US 255 Interpreting Accounting Records	3	0	3
US 233 Personnel Management	3	0	3
US 245 Retailing	3	0	3
US 237 Wholesaling	3	0	3
US 266 Budget and Record Keeping	3	0	3
US 217 Business Law	3	0	3
US 300S Current Trends in Business	2	4	4

SOCIAL SCIENCE

	C	L	Cr
C 201 Social Science	3	0	3
C 202 Social Science	3	0	3
C 205 American Institutions	3	0	3
L. 201 United States Government	3	0	3
Y 206 Applied Psychology	3	0	3

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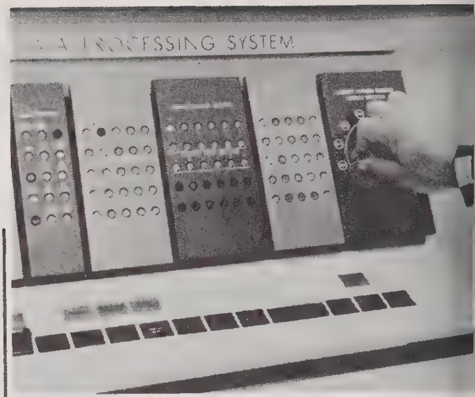
pulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory.

ss Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

BUSINESS DATA PROCESSING



Purpose of Curriculum

The processing of data by electronic equipment has created vast chang in business and industry. Nowhere are these changes more apparent than the occupations associated with the handling of business information. Mu of the routine and time-consuming work of obtaining, compiling and repor ing the information necessary for a business to operate can now be adapt to machine processing.

This curriculum is designed to give the student (1) an understanding the principles of business operation, (2) experience with techniques a handling business data, and (3) functional competence in the application data processing systems, and experience in computer programming business records and accounts, inventory, sales, and income and expen tures essential to business and to management decisions.

Emphasis is upon business data processing and use of machines in solvi business problems.

Job Description

The business data processing specialist applies currently available p gramming techniques to a defined problem with minimum supervision. analyzes and defines systems requirements to develop a program electronic data processing; conducts detailed analyses of systems requi ments, and develops all levels of block diagrams and logical flow char Translates program details into coded instructions; establishes test da tests, refines, and revises program and documents the procedures. Ascerta if other combinations of instruction would achieve greater flexibility, bet machine utilization, or more dependable results. He may prepare a co plete set of operating instructions for use by a console operator; on occasi operates the console in processing program.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

irst Quarter	C	L	CH
-ENG 101 Grammar	3	0	3
-MAT 101 Technical Mathematics	5	0	5
-MAT 121 Numbering System and Boolean Algebra	4	0	4
-EDP 101 Functional Wiring Principles	2	3	3
-EDP 104 Introduction to Data Processing Systems	3	2	4
	17	5	19

econd Quarter	C	L	CH
-ENG 102 Composition	3	0	3
-MAT 102 Technical Mathematics	5	0	5
EDP 106 Business Programming	2	4	4
EDP 102 Functional Wiring Principles	2	3	3
-BUS 120 Accounting	5	2	6
	17	9	21

hird Quarter	C	L	CH
ENG 103 Report Writing	3	0	3
EDP 108 Scientific Programming	2	4	4
MAT 103 Technical Mathematics	5	0	5
MAT 214 Statistics	5	0	5
	15	4	17

urth Quarter	C	L	CH
ENG 204 Oral Communication	3	0	3
EDP 202 Programming System Techniques	3	4	5
BUS 121 Accounting	5	2	6
BUS 110 Office Machines	2	2	3
	13	8	17

fth Quarter	C	L	CH
Social Science Elective	3	0	3
EDP 205 Linear Programming & Critical Path Method	4	2	5
BUS 225 Cost Accounting	3	2	4
BUS 115 Business Law	3	0	3
BUS 235 Business Management	3	0	3
	16	4	18

Sixth Quarter

	C
Social Science Elective	3
T-EDP 216 Research Project	1
T-BUS 116 Business Law	3
Elective	6
	13

Total

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Pe
°"Manipulative laboratory" involves development of skills and job proficiency. Cre
one quarter hour for each three hours of laboratory.

ELECTIVES

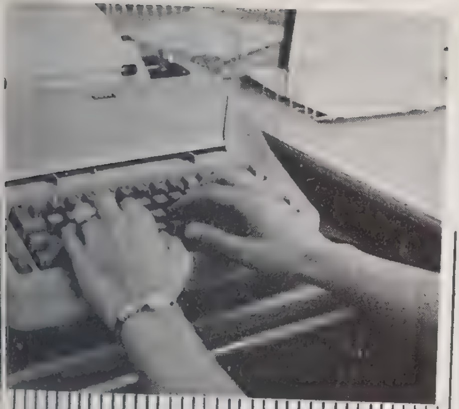
Electives for the **Business Data Processing Curriculum** will be selected fro
following courses. The school may determine which of these are to be offered i
given quarter of the program.

BUSINESS DATA PROCESSING

COURSE TITLE	C
T-MAT 215S Statistical Programming	3
T-EDP 219 Systems and Procedures	3
T-EDP 211 Procedures and Techniques of Automated Design	4
T-EDP 260 Introduction to System 360	3

SOCIAL SCIENCE

T-SSC 201 Social Science	3
T-PSY 206 Applied Psychology	3
T-ECO 102 Economics	3
T-SSC 205 American Institutions	3
T-POL 201 United States Government	3



MEDICAL SECRETARY

POSE OF CURRICULUM

e demand for better qualified medical secretaries in our ever-expanding cal profession is becoming more acute. The purpose of this curriculum outline a training program that will provide specialized training in the ted procedures required by the medical profession, and to enable ns to become proficient soon after accepting employment in the al and health occupations.

Medical Secretary Curriculum is designed to offer the students the ary secretarial skills in typing, dictation, transcription, and terminology nployment in the medical profession. The special training in secretarial ts is supplemented by related courses in mathematics, accounting, ss law, and personality development.

lescription

graduate of the Medical Secretary Curriculum should have a knowl- f medical terminology, skill in dictation and accurate transcription of l records, reports and letters. The duties of a medical secretary may of: taking dictation and transcribing letters, memoranda and reports, g office callers and screening telephone calls, filing, and scheduling tments. The graduate may enter a secretarial position in a variety of such as physicians', private and public hospitals, federal and state programs, and the drug and pharmaceutical industry.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C
T-ENG 101 Grammar	3
T-BUS 102 Typewriting	2
T-MAT 110 Business Mathematics	5
T-BUS 101 Introduction to Business	5
T-BUS 106 Shorthand	3
	18

Second Quarter	C
T-ENG 102 Composition	3
T-BUS 103 Typewriting	2
T-BUS 107 Shorthand	3
T-BUS 120 Accounting	5
Social Science Elective	3
	16

Third Quarter	C
T-ENG 204 Oral Communications	
T-BUS 104 Typewriting	
T-BUS 108 Shorthand	
T-BUS 110 Office Machines	
T-BUS 112 Filing	
T-BUS 182MS Anatomy	
	1

Fourth Quarter	C
T-ENG 103 Report Writing	
T-BUS 206M Dictation and Transcription	
T-BUS 205 Advanced Typewriting	
T-BUS 211 Office Machines	
T-EDP 103S Concepts of Data Processing	
T-BUS 183M Terminology and Vocabulary	
	1

Fifth Quarter	C
T-ENG 206 Business Communication	
T-BUS 207M Dictation and Transcription	
T-BUS 115 Business Law	
Social Science Elective	
T-BUS 284M Terminology and Vocabulary	

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*“Manipulative laboratory” involves development of skills and job proficienc of one quarter hour for each three hours of laboratory.

Quarter

	C	L	CH
S 208M Dictation and Transcription	3	2	4
S 271 Office Management	3	0	3
S 214 Secretarial Procedures	3	2	4
ive	3	0	3
	12	4	14

Total 108

ELECTIVES

tives for the **Medical Secretarial Curriculum** may be selected from the following s. The school may dtermine which of these are to be offered in any given r of the program.

MEDICAL SECRETARY

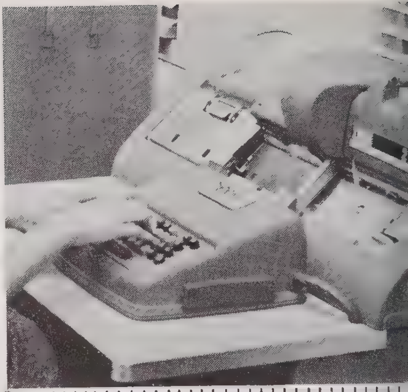
	C	L	Cr
121 Accounting	5	2	6
215M Office Application	6	0	6
108 Consumer Economics	3	0	3
102 Economics	3	0	3
112 Personality Development	3	0	3
116 Business Law	3	0	3
	3	0	3

SOCIAL SCIENCE

201 Social Science	3	0	3
202 Social Science	3	0	3
206 Applied Psychology	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3

Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

SCIENTIFIC DATA PROCESSING



Purpose of Curriculum

The processing of data by electronic equipment has created vast cl in scientific research and industry. The curriculum of Scientific Processing is designed, especially in the second year, to assist stud preparing for the new techniques and stresses mathematics in each six quarters of work. The program provides graduates qualified to:

1. Apply currently available programming techniques to a problem with minimum supervision.
2. Program and operate any computer with a minimum of orier
3. Understand and master special techniques as the need
4. Communicate their properly documented programming decis personnel concerned.

Emphasis in the second year of the curriculum is upon scientifi processing. Machines are used in the solution of research, productio engineering problems.

Students learn calculus, numerical analysis, theory of probabili statistics.

Job Description

The scientific data processing specialist analyzes and defines requir to develop program for electronic data processing; conducts d analyses of systems requirements, and develops all levels of block di and logical flow charts; translates program details into coded instru develops and prepares plans; establishes test data; tests, refines, and program. Evaluates and modifies existing programs as procedures or of reports change.

SUGGESTED CURRICULUM BY QUARTERS

RSE TITLE

Quarter

	C	L	CH
G 101 Grammar	3	0	3
T 101 Technical Mathematics	5	0	5
T 121 Numbering System and Boolean Algebra	4	0	4
P 101 Functional Wiring Principles	2	3*	3
P 104 Introduction to Data Processing Systems	3	2	4
	17	5	19

d Quarter

	C	L	CH
102 Composition	3	0	3
T 102 Technical Mathematics	5	0	5
106 Business Programming	2	4	4
102 Functional Wiring Principles	2	3*	3
120 Accounting	5	2	6
	17	9	21

Quarter

	C	L	CH
103 Report Writing	3	0	3
108 Scientific Programming	2	4	4
103 Technical Mathematics	5	0	5
214 Statistics	5	0	5
	15	4	17

Quarter

	C	L	CH
204 Oral Communication	3	0	3
202 Programming System Techniques	3	4	5
201 Technical Mathematics	5	0	5
101 Physics: Properties of Matter	3	2	4
	14	6	17

arter

	C	L	CH
ience Elective	3	0	3
205 Linear Programming and Critical Path Method	2	4	4
02 Physics: Work, Energy, Power	3	2	4
225 Numerical Analysis	5	0	5
	13	6	16

lative laboratory" involves development of skills and job proficiency. Credit arter hour for each three hours of laboratory.

Sixth Quarter

	C
Social Science Elective	3
T-EDP 216 Research Project	1
T-PHY 103 Physics: Electricity	3
Elective	6
	13

Total

ELECTIVES

Electives for the **Scientific Data Processing Curriculum** will be selected fr following courses. The school may determine which of these are to be offered given quarter of the program.

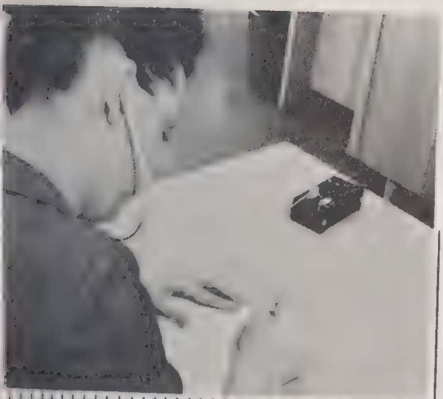
SCIENTIFIC DATA PROCESSING

	C
T-MAT 215 Statistical Programming	3
T-MAT 219 Differential Equations	5
T-EDP 260 Introduction to System 360	3

SOCIAL SCIENCE

T-SSC 201 Social Science	
T-SSC 202 Social Science	
T-PSY 206 Applied Psychology	
T-ECO 102 Economics	
T-SSC 205 American Institutions	
T-POL 201 United States Government	

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.



TECHNICAL SECRETARY

ose of Curriculum

e Technical Secretary Curriculum is designed to prepare a student
position in the office of a firm dealing in research, development and
iction in the scientific fields. The curriculum offers students the
sary secretarial skills and the required background of understanding
ppreciation of the scientific method, the beginnings of a technical
ulary and a feeling of respect for accuracy that will be essential in
work in the field.

escription

duates of this program may qualify for employment as stenographer-
aries, technical secretaries, and possibly as private secretaries. They
demand where engineers and other technical personnel find a need
ecretarial help who can understand the specialized language of
ical, Mechanical, Civil, or Chemical Engineers. The duties of an
ering and technical secretary may consist of taking dictation and
ibing letters, memoranda and reports, meeting office callers and
ing telephone calls, filing, and scheduling appointments. Graduates
program, since they have received a background of science and
ering terminology in addition to their business background, are
bly prepared to work with engineering reports, records and corre-
ence.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C
T-ENG 101 Grammar	3
T-BUS 102 Typewriting	2
T-MAT 110 Business Mathematics	5
T-BUS 101 Introduction to Business	5
T-BUS 106 Shorthand	3
	18

Second Quarter	C
T-ENG 102 Composition	3
T-BUS 103 Typewriting	2
T-BUS 107 Shorthand	3
T-BUS 120 Accounting	5
Social Science Elective	3
	16

Third Quarter	C
T-ENG 204 Oral Communications	3
T-BUS 104 Typewriting	2
T-BUS 108 Shorthand	3
T-BUS 110 Office Machines	2
T-BUS 112 Filing	3
T-BUS 183T Terminology and Vocabulary	3
	16

Fourth Quarter	C
T-ENG 103 Report Writing	3
T-BUS 206T Dictation and Transcription	3
T-BUS 205 Advanced Typewriting	2
T-BUS 211 Office Machines	2
T-EDP 103 Concepts of Data Processing	4
Elective	3
	17

Fifth Quarter	C
T-ENG 206 Business Communication	
T-BUS 207T Dictation and Transcription	
T-BUS 115 Business Law	
Social Science Elective	
Elective	
	1

Quarter

	C	L	CH
JS 208T Dictation and Transcription	3	2	4
JS 271 Office Management	3	0	3
JS 214 Secretarial Procedures	3	2	4
ive	3	0	3
	12	4	14
Total			108

ELECTIVES

ctives for the **Technical Secretarial Curriculum** may be selected from the ing courses. The school may determine which of these are to be offered in any quarter of the program.

TECHNICAL SECRETARY

	C	L	Cr
112 Personality Development	3	0	3
121 Accounting	5	2	6
102 Economics	3	0	3
215T Office Application	6	0	6
108 Consumer Economics	3	0	3
116 Business Law	3	0	3
	3	0	3

SOCIAL SCIENCE

	C	L	Cr
201 Social Science	3	0	3
202 Social Science	3	0	3
206 Applied Psychology	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3

ulative laboratory" involves development of skills and job proficiency. Credit uarter hour for each three hours of laboratory.

Hrs. Per Week L = Lab Hrs. Per Week CH = Credit Hrs. Per Qtr.

ENGINEERING TECHNOLOGY

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

ose of Curriculum

recent years the use of air-conditioning and refrigeration equipment ncreased tremendously. Practically all new building construction for ness and commercial use have "year-round" air-conditioning systems. y homes now have air conditioning and the trend is toward greater use ear-round" systems for cooling and heating. Transportation systems ood industries are requiring greater use of refrigeration systems for t, storage and display of products. With this great upswing in the use conditioning and refrigeration equipment, a greater demand is made ained personnel to plan and supervise installations and to supervise the tion and maintenance of this equipment.

e curriculum is designed to prepare the student to assist in planning, lling, operating and maintaining air conditioning equipment. The ed technical information is presented and related skills are developed will enable the graduate to function efficiently when working with ers, systems designers, skilled craftsmen, salesmen, and others in the Considerable emphasis is placed on self-development in an effort to rage the graduate to continue to study and grow as the industry ces.

escription

air conditioning and refrigeration technician may be employed in of sales, installation, maintenance, production drafting, systems design, research engineering assistant. He is involved with equipment for ing temperature and humidity. He works with control systems, ducts ping for distribution of air, water, steam, and refrigerants. His duties e concerned with any or all of these systems and components.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C
T-ENG 101 Grammar	3
T-MAT 101 Technical Mathematics	5
T-PHY 101 Physics: Properties of Matter	3
T-DFT 101 Technical Drafting	1
T-AHR 101 Fundamentals of Refrigeration I	4
	16

Second Quarter	C
T-ENG 102 Composition	3
TM-AT 102 Technical Mathematics	5
T-PHY 102 Physics: Work, Energy, Power	3
T-DFT 102 Technical Drafting	1
T-AHR 102 Fundamentals of Refrigeration II	3
	15

Third Quarter	C
T-ENG 103 Report Writing	3
T-MAT 103 Technical Mathematics	5
T-PHY 103 Physics: Electricity	3
T-AHR 103 Commercial Refrigeration Systems Designs	3
	14

Fourth Quarter	C
T-ENG 204 Oral Communication	
T-DFT 204 Description Geometry	2
T-PHY 231 Fluid Mechanics	
T-AHR 201 Heating Principles	
T-AHR 216 Circuits & Controls I	
	1

Fifth Quarter	C
Social Science Elective	
T-AHR 203 Air Conditioning Principles	
T-DFT 226 Air Conditioning Systems Drawing	
Elective	

*"Manipulative laboratory" involves development of skills and job proficiency of one quarter hour for each three hours of laboratory.

C = Class Hrs. Per Week L = Lab Hrs. Per Week CH = Credit Hrs.

Quarter

	C	L	CH
l Science Elective	3	0	3
R 209 Air Conditioning Systems Design	5	6	7
R 227 Estimating & Contracts	3	6	5
ive			3
	11	12	18

Total 110

ELECTIVES

tives for the **Air Conditioning and Refrigeration Technology Curriculum** will be d from the following courses. The school may determine which of these are to be l in any given quarter of the program.

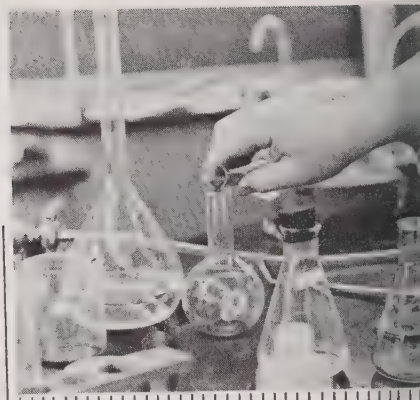
TECHNICAL

	C	L	Cr
. 217 Circuits and Controls II	3	3	4
230 Seminar and Research	1	4	3
210 Installation and Design Problems	2	6	4
202 Fuels and Burners	2	3	3

SOCIAL SCIENCE

201 Social Science I	3	0	3
202 Social Science II	3	0	3
206 Applied Psychology	3	0	3
102 Economics	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3
01 Industrial Organization and Management	3	0	3

CHEMICAL TECHNOLOGY



Purpose of Curriculum

This curriculum guide provides a program for instruction of stud the basic knowledge and skills involved in laboratory and plant ope of the chemical industry. Technical knowledge and laboratory tech are emphasized and a relationship between the theoretical and pr maintained.

The curriculum is designed to prepare persons to serve in two roles: (1) research assistant to a chemist in the laboratory; and (2) pl and production assistant to chemical engineers in converting the re chemist's discoveries into actual industrial production. Research lab assistants must be well grounded in chemical analysis, testing, and syn Chemical production assistants must have command of a basic knowl chemical processing and ability to use main types of equipme machinery for making chemical products.

Job Description

The chemical technician performs quantitative and qualitative cl analyses of processes involved in a production situation. Tests sam raw materials to determine that they are within specification limits for manufacturing of desired products. Analyzes samples of produc mediates at manufacturing steps so as to supply data to processing pe by which they may control reactions involved, to determine processing is being performed according to plant specifications, solve current production problems. Analyzes samples of finished pro determine whether quality warrants its release for shipment, using ar methods to determine percentages, such as acetone extract, heating ash content. Prepares laboratory test reports and checks analys specifications and consults with laboratory supervisors. Makes analyses as necessary. May secure samples used.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

Quarter

	C	L	CH
IG 101 Grammar	3	0	3
AT 101 Tech. Math	5	0	5
'T 101 Tech. Drafting	1	6°	3
IM 111 General Chemistry I	4	3°	5
l Science Elective	3	0	3
	15	9	19

d Quarter

	C	L	CH
G 102 Composition	3	0	3
T 102 Tech. Math	5	0	5
Y 101 Properties of Matter	3	2	4
T 102 Tech. Drafting	1	6°	3
M 112 General Chemistry II	4	3°	5
	15	11	20

Quarter

	C	L	CH
103 Report Writing	3	0	3
T 103 Tech. Math	5	0	5
102 Work Energy and Power	3	2	4
1 113S General Chemistry III	4	3	5
1 250S Qualitative Analysis	2	4	4
	17	9	21

Quarter

	C	L	CH
204 Oral Communication	3	0	3
I 121 Quantitative Analysis I	3	6°	5
I 227 Physical Chemistry	3	2	4
103 Electricity	3	2	4
Science Elective	3	0	3
	15	10	19

arter

	C	L	CH
222 Quantitative Analysis II	2	9°	5
231 Organic Chemistry I	3	6°	5
104 Light and Sound	3	2	4
s	5	0	5
	13	17	19

Sixth Quarter

	C
T-CHM 232 Organic Chemistry II	3
T-CHM 241 Industrial Chem. Analysis I	3
Electives	

Seventh Quarter

	C
T-CHM 233 Organic Chemistry III	3
T-CHM 242 Industrial Chem. Analysis II	3
Electives	

Total

ELECTIVES

Electives for the **Chemical Technology Curriculum** will be selected from the fol courses. The school may determine which of these are to be offered in any quarter of the program.

TECHNICAL

T-MEC 116 Engineering Materials	3
T-MAT 201 Technical Mathematics	5
T-MAT 219 Differential Equations	5
T-PHY 104 Physics: Light and Sound	3
T-PHY 231 Fluid Mechanics	3

SOCIAL SCIENCE

T-SSC 201 Social Science	3
T-SSC 202 Social Science	3
T-PSY 206 Applied Psychology	3
T-ECO 102 Economics	3
T-SSC 205 American Institutions	3
T-POL 201 United States Government	3
T-ISC 201 Industrial Organization and Management	3

°"Manipulative laboratory" involves development of skills and job proficiency. of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

DRAFTING AND DESIGN TECHNOLOGY

›se of Curriculum

s curriculum guide was prepared for the purpose of outlining a train- rogram for students of mechanical drafting and design technology. are certain identifiable duties which are common to all technicians general classification and which comprise the basic areas of technical edge they need. This curriculum has been designed for training is in the accepted performance of these basic duties that will be ed, and to enable the individual student to become proficient in a time after he becomes employed in the industry.

rses in general education have been included to give a student the nce and understanding that comes with education upon a broad base. chnician associates with many levels of thought and expression— istrative personnel, scientists, engineers, skilled workmen—and must be communicate effectively with all levels. Courses containing essential ation from related subject areas, such as mathematics, physics, and nics have been included in order to provide the student a better nic base for his training. Emphasis is placed upon ability to think and s well as drafting procedures and techniques.

scription

anical drafting and design technicians are concerned with the ation of drawings for design proposals, for experimental models and r production use.

technicians perform many aspects of drafting in a specialized field, the developing of the drawing of a section, sub-assembly or major ent. Investigating design factors and availability of material and ent, production methods and facilities are frequent assignments. ssist in the design of units and controls from specifications by

utilizing drawings of existing units and reports on functional perform
They may draw components in industrial fields based on engineers' or
design concepts or specific ideas. Also, they may be assigned as coordi
for the execution of related work of other design, production, to
material and planning groups. Technicians with experience in this clas
tion may often supervise the preparation of working drawings.

These technicians are employed in many types of manufacturing, fa
tion, research development and service industries. Substantial nu
also are employed in communications, transportation, public utilities
sulting engineering firms, and federal, state, and local governn

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter

	C
T-ENG 101 Grammar	3
T-MAT 101 Technical Mathematics	5
T-PHY 101 Physics: Properties of Matter	3
T-DFT 101 Technical Drafting	1
T-MEC 101 Machine Processes	0
	12

Second Quarter

	C
T-ENG 102 Composition	3
T-MAT 102 Technical Mathematics	5
T-PHY 102 Physics: Work, Energy, Power	3
T-DFT 102 Technical Drafting	1
T-MEC 102 Machine Processes	0
	12

Third Quarter

	C
T-ENG 103 Report Writing	3
T-MAT 103 Technical Mathematics	5
T-PHY 103 Physics: Electricity	3
T-PHY 106 Applied Mechanics	5
T-DFT 103 Technical Drafting I	1
	17

Fourth Quarter

	C
T-ENG 204 Oral Communication	
T-DFT 201 Technical Drafting	
T-DFT 204 Descriptive Geometry	
T-MEC 205 Strength of Materials	
T-MEC 210 Physical Metallurgy	
	1

Quarter

	C	L	CH
l Science Elective	3	0	3
FT 205 Design Drafting I	2	6*	4
FT 211 Mechanisms	3	2	4
EC 211 Physical Metallurgy	3	3*	4
ive			4
	11	11	19

Quarter

	C	L	CH
l Science Elective I	3	0	3
T 206 Design Drafting II	2	6*	4
C 235 Hydraulics & Pneumatics	3	3*	4
ive			4
ive			4
	8	9	19

Total 111

ELECTIVES

tives for the **Drafting & Design Technology Curriculum** will be selected from lowing courses. The school may determine which of these are to be offered in any quarter of the program.

TECHNICAL

	C	L	Cr
T 212 Jig and Fixture Design	2	6	4
201 Industrial Controls	3	2	4
201 Electrical Machinery	3	0	3
237 Control Systems	2	4	4
201 Industrial Organization and Management	3	0	3

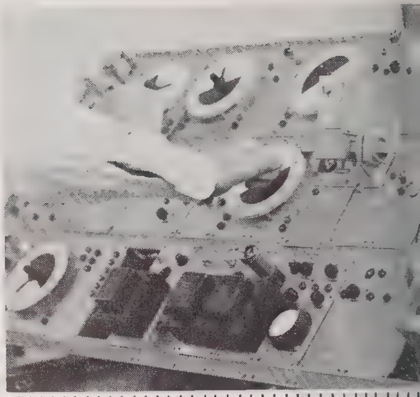
SOCIAL SCIENCE

	C	L	Cr
201 Social Science I	3	0	3
202 Social Science II	3	0	3
206 Applied Psychology	3	0	3
102 Economics	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3

ulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory

s Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

ELECTROMECHANICAL TECHNOLOGY



In this age of automation, more and more equipment and systems u combinations of electrical and mechanical devices. Since these most are intended to function together as single units, they would best be with by persons who understand all aspects of their total operation. S person trained in the application of both electrical and mechanical con is called an "electromechanical technician". Being versed in both discip this technician would objectively analyze electromechanical problem devise the most efficient and optimum solutions.

This curriculum is designed to appeal to the exceptional individual wishes to develop his understanding of electronics and mechanics t fullest. Along with a strong background in mathematics, he must ha interest and aptitude in both electronics and mechanics, and be al relate this knowledge to complex systems. A sequence of courses has arranged to develop these skills in a minimum time of seven quarters those who begin this program only to find they prefer a more speci field, a transfer to either electronics or drafting and design may be arr with little loss of credit.

Job Description

The Electromechanical Technician fabricates, tests, analyzes, and a precision electromechanical instruments, such as temperature probe aerodynamic probes; follows blueprints and sketches; uses handtools, working machines, such as bench lathe, milling machine, punch pres drill press to fabricate housings, fittings, jigs, and holding fixtures verifies dimensions, using micrometer and calipers. He also asse wires, insulation, and electrical components, such as resistors and capa installs electrical assemblies and hardware in housings, using hand and soldering equipment; tests assembled instruments for circuit cont and operational reliability using multimeter, oscilloscope, oscillator, v tube voltmeter, and bridge; analyzes test results and repairs or truments according to analysis, and records test results and writes reports fabrication techniques. The Electromechanical Technician has potential ployment possibilities with industry and business in maintenance, pro- tion, research, development or sales as an engineering assistant, en- eering aide, or trouble shooter.

SUGGESTED CURRICULUM BY QUARTERS

URSE TITLE

t Quarter

	C	L	CH
NG 101 Grammar	3	0	3
AT 101 Technical Mathematics	5	0	5
FT 101 Technical Drafting	1	6	3
LC 101 Fundamentals of Electricity	4	4	6
	13	10	17

nd Quarter

	C	L	CH
NG 102 Composition	3	0	3
AT 102 Technical Mathematics	5	0	5
T 102 Technical Drafting	1	6	3
HY 101 Physics: Properties of Matter	3	2	4
C 102 Fundamentals of Electricity	4	4	6
	16	12	21

l Quarter

	C	L	CH
G 103 Report Writing	3	0	3
AT 103 Technical Mathematics	5	0	5
N 105 Control Devices	5	4	7
Y 102 Physics: Work, Energy, Power	3	2	4
	16	6	19

h Quarter

	C	L	CH
G 20 Oral Communications	3	0	3
C 101 Machine Processes	0	6	2
C 110 Fundamental Mechanisms	2	4	4
N 101 Electronic Instruments and Measurements	1	4	3
3 201 Introduction to Electromechanical Systems	3	2	4
	9	16	16

Quarter

	C	L	CH
Science Elective	3	0	3
104 Physics: Light and Sound	3	2	4
N 214 Wave Shaping and Pulse Circuits	2	2	3
3 202 Electromechanical Systems	3	6	5
N 201 Industrial Controls	3	2	4
	14	12	19

Sixth Quarter

	C
Social Science Elective	3
T-MEC 235 Hydraulics and Pneumatics	3
T-ELN 240 Digital Computers	3
T-PHY 106 Applied Mechanics	5
T-ELC 201 Electrical Machinery	3
	17

Seventh Quarter

	C
T-EDP 104 Introduction to Data Processing Systems	3
T-CYB 203 Electromechanical Systems	3
Electives	
	6
Total	

ELECTIVES

Electives for the Electromechanical Technology Curriculum will be sel from the following courses. The school may determine which of these be offered in any given quarter of the program.

TECHNICAL

	C
T-ELN 208 Industrial Electronics	4
T-MEC 205 Strength of Materials	3

SOCIAL SCIENCE

T-SSC 201 Social Science I	3
T-SSC 202 Social Science II	3
T-PSY 206 Applied Psychology	3
T-ECO 102 Economics	3
T-SSC 205 American Institutions	3
T-POL 201 United States Government	3

°"Manipulative laboratory" involves development of skills and job proficiency of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

ELECTRONICS TECHNOLOGY

ose of Curriculum

e field of electronics has developed at a rapid pace since the turn of entury. For many years the major concern of electronics was in the of communications. Developments during World War II and in the d since have revolutionized production techniques. New industries been established to supplement the need and demand for electronics oment.

ny opportunities exist for men and women with a technical education ectronics. This curriculum provides a basic background in electronic d theory with practical applications of electronics for business and try. Courses are designed to develop competent electronics technicians may take their place as an assistant to an engineer, or as a liaison een the engineer and the skilled craftsman.

escription

electronics technician may start in one or more of the following research, design, development, production, maintenance or sales. ay be an assistant to an engineer, an engineering aide, laboratory ician, supervisor or equipment specialist. His training is similar to that engineer, but in less depth and more practical in application. He can on as a liaison between an engineer and the skilled craftsman.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	C	
T-ENG 101 Grammar	3	
T-MAT 101 Technical Mathematics	5	
T-PHY 101 Physics: Properties of Matter	3	
T-DFT 101 Technical Drafting	1	
T-ELC 101 Fundamentals of Electricity	4	4
	16	12

Second Quarter	C	
T-ENG 102 Composition	3	
T-MAT 102 Technical Mathematics	5	
T-PHY 102 Physics: Work, Energy, Power	3	
T-DFT 102 Technical Drafting	1	
T-ELC 102 Fundamentals of Electricity	4	4
	16	12

Third Quarter	C	L
T-ENG 103 Report Writing	3	
T-MAT 103 Technical Mathematics	5	
T-ELN 101 Electronic Instruments and Measurements	1	4
T-ELN 105 Control Devices	5	4
	14	8

Fourth Quarter	C	
T-ENG 204 Oral Communication	3	
T-MAT 201 Technical Mathematics	5	
T-PHY 104 Physics: Light and Sound	3	
T-ELN 205 Application of Vacuum Tubes and Transistors	5	4
	16	6

Fifth Quarter	C	
Social Science Elective	3	
T-ELN 210 Semiconductor Circuit Analysis	5	2
T-ELN 214 Wave Shaping and Pulse Circuits	2	2
Elective	2	2
	10	4

°"Manipulative laboratory" involves development of skills and job proficiency of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

th Quarter

	C	L	CH
al Science Elective	3	0	3
LN 215 Wave Shaping and Pulse Circuits	2	2 or 3	3
LN 220 Electronic Systems	5	4 or 6	7
ctive			3
	10	6 or 9	16
	Total		110

ELECTIVES

ctives for the **Electronics Technology Curriculum** will be selected from the wing courses. The school may determine which of these are to be offered in any quarter of the program.

TECHNICAL

	C	L	Cr
N 225 Transmission and Propagation	3	0	3
N 227 UHF and Microwave Systems	5	4	7
N 230 Television Systems	4	6	7
N 235 Industrial Instrumentation	4	6	7
N 240 Digital Computers	3	0	3
N 245 Electronic Design Project	0	4	2
C 210 Rotating Devices	2	2	3
M 101 Chemistry	4	2	5
P 104 Introduction to Electronic Data Processing Systems	3	2	4
T 208 Calculus and Laplace Transforms for Electronics	5	0	5
C 110 Fundamental Mechanisms	2	4	4

SOCIAL SCIENCE

	C	L	CH
201 Social Science	3	0	3
202 Social Science	3	0	3
206 Applied Psychology	3	0	3
102 Economics	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3

MANUFACTURING TECHNOLOGY

PRATT & WHITNE
COOL

Purpose of Curriculum

A primary objective of this program is the training of personnel to
the engineer or small industry in planning, tooling, operating, serv
and supervising manufacturing operations. Practically every branch of r
facturing and much research and design make use of the mechanical p
ples presented in this curriculum. With the increasing importance of
mated production, quality control, and production scheduling techn
the position of the technician in this field has become of primary impor
This curriculum provides basic background of mechanical and r
theory with specific skills in the use of manufacturing and testing equip
The students are given experience in operating and servicing ma
accompanied by general education and management courses.

Job Description

A graduate of this program may qualify for an entry position in
several manufacturing functions. Methods analysis, production sched
quality control, materials testing, plant layout, time study, machine t
maintenance, equipment and instrument work are typical of situations
the graduate may be able to function with a minimum of on-t
training.

SUGGESTED CURRICULUM BY QUARTERS

URSE TITLE

t Quarter

	C	L	CH
NG 101 Grammar	3	0	3
IAT 101 Technical Mathematics	5	0	5
HY 101 Physics: Properties of Matter	3	2	4
FT 101 Technical Drafting	1	6	3
EC 101 Machine Processes	0	6	2
	12	14	17

nd Quarter

	C	L	CH
NG 102 Composition	3	0	3
AT 102 Technical Mathematics	5	0	5
IY 102 Physics: Work, Energy, Power	3	2	4
T 102 Technical Drafting	1	6*	3
EC 102 Machine Processes	0	6*	2
	12	14	17

Quarter

	C	L	CH
G 103 Report Writing	3	0	3
T 103 Technical Mathematics	5	0	5
Y 103 Physics: Electricity	3	2	4
Y 106 Applied Mechanics	5	0	5
C 103 Machine Processes	0	6	2
	16	8	19

Quarter

	C	L	CH
204 Oral Communication	3	0	3
205 Strength of Materials	3	2	4
210 Physical Metallurgy	3	3*	4
213 Production Planning	3	3*	4
201 Machine Processes	2	6*	4
	14	14	19

uarter

	C	L	CH
cience Elective	3	0	3
211 Physical Metallurgy	3	3*	4
211 Mechanisms	3	2	4
02 Quality Control	3	2	4
	4	0	4
	16	7	19

ulative laboratory" involves development of skills and job proficiency. Credit uarter hour for each three hours of laboratory.

Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Sixth Quarter	C
Social Science Elective	3
T-ISC 203 Motion Study	3
T-MEC 235 Hydraulics and Pneumatics	3
Elective	4
Elective	4
	17

Total

ELECTIVES

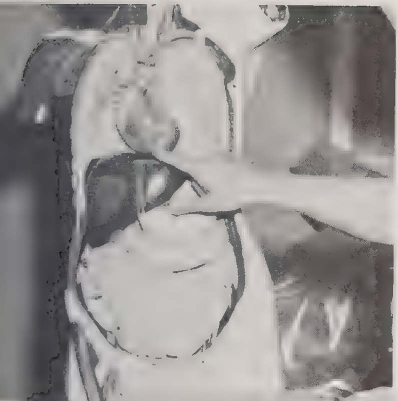
Electives for the **Manufacturing Technology Curriculum** will be selected fr following courses. The school may determine which of these are to be offered given quarter of the program.

TECHNICAL

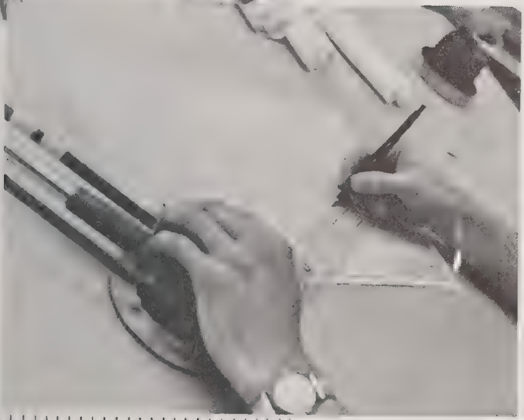
	C
T-DFT 212 Jig and Fixture Design	2
T-MEC 212 Practical Automation	3
T-MEC 214 Tool Engineering	3
T-ELN 201 Industrial Controls	3
T-ELC 201 Electrical Machinery	3
T-CHM 101 Chemistry	4
T-MEC 237 Control Systems	2
T-ISC 204 Value Analysis	3
T-ISC 201 Industrial Organization and Management	3
T-ISC 209 Plant Layout	3

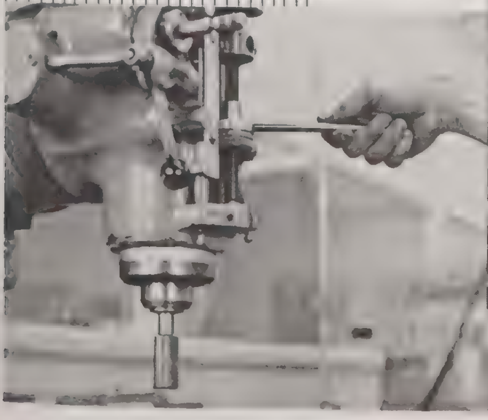
SOCIAL SCIENCE

T-SSC 201 Social Science	
T-SSC 202 Social Science	
T-PSY 206 Applied Pschology	
T-ECO 102 Economics	
T-SSC 205 American Institutions	
T-POL 201 United States Government	



DIPLOMA PROGRAMS





DIPLOMA PROGRAMS

(one-year)

ADMISSION REQUIREMENTS

following are minimum admission requirements to the regular one-year aratory curriculums and vocational programs:

imum Admission Requirements

ndidate for admission to the regular trade-vocational training programs meet the following qualifications:

1. Must be at least 18 years of age and have the ability to enter into or make advancement in the area in which enrolled.
2. Must have satisfactorily completed a minimum of eight (8) units of accredited secondary school work. Those who have not successfully completed eight (8) units of such work will be required to take other standard and/or local institution tests.

Must demonstrate aptitude for vocational training as determined by standard and/or local institution tests to insure ability to meet job requirements in the desired trade.

May be required to have a personal interview with designated school representative.

Must be in acceptable physical and mental health to meet qualifications for a given occupation.

lition to the above minimum admission requirements, more specific uisites are necessary in some programs.

ggested that students should have completed one unit of algebra.

es are available at the Institute for removal of academic deficiencies.

HEALTH OCCUPATIONS

DENTAL ASSISTING

ose of Curriculum

ntal assisting is one of the fastest growing occupations for women today. ole of the dental assistant has evolved from that of receptionist only to of a fully participating member of the dental team; primary emphasis chairside assisting, although she continues to perform numerous duties d to office management, patient relations, and laboratory procedures. lental profession now recognizes the contribution the dental assistant ake to the extension of services and increased productivity of the office. Projected needs call for a fivefold expansion in numbers of tes and continued improvement in the quality of training programs.

specific objectives of the Dental Assisting Curriculum are to develop lowing competencies:

Understanding of the business procedures of the dental office.

Understanding of principles and beginning skill in the procedures of chairside assisting, including effective patient relationships.

Understanding of principles and beginning skills in performance of selected laboratory procedures commonly carried out in the dental office.

scription

duties of the dental assistant vary somewhat, depending on the of auxiliary workers employed. In some offices the assistant is ible for all three areas described below; in others, she may be ible for only one area.

ndering chairside assistance to the dentist, the dental assistant is ble for placing instruments for use, keeping the operating field ring treatment, preparing restorative materials and dental cements,

passing materials and instruments during dental procedures, and care
operatory after use. She may take X-rays of the teeth and apply fl
under the direction of the dentist. In the laboratory of the dental offi
may make models of the teeth and mouth, cast inlays and crowns,
exposed X-ray films and mount finished X-rays. In acting as office m
and receptionist, she receives patients, arranges appointments,
treatments, keeps accounts, maintains inventories, and orders su

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE	C
First Quarter	
DEN 1001 Introduction to Dental Assisting	
DEN 1002 Dental Materials	
DEN 1003 Preclinical Sciences I	
ENG 1102 Communication Skills	
PSY 1112 Personality Development	
	1

	C
Second Quarter	
DEN 1004 Preclinical Sciences II	
DEN 1005 Dental Accounting	
DEN 1006 Clinical Procedures I	
BUS 1102 Typewriting	
	1

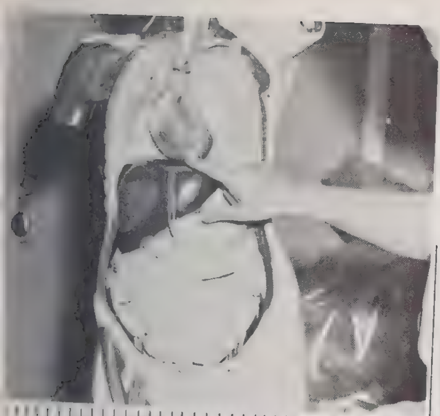
	C
Third Quarter	
DEN 1007 Clinical Procedures II	
DEN 1008 Dental Office Management	
DEN 1009 Dental Office Practice I	
ENG 1103 Report Writing	

	C
Fourth Quarter	
DEN 1010 Dental Office Practice II	
DEN 1011 Dental Assistant Seminar	
PSY 1101 Human Relations	

Tot

°"Manipulative laboratory" involves development of skills and job proficienc
of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs



accelerated growth in North Carolina and rapid advancement in
al technology demands a large increase in the number of well-trained,
ble personnel for health service positions.

aim of this program is to make available the opportunity for the
sted male and female to prepare themselves for participation in the
of patients of all ages, in various states of dependency, and with a
y of illness conditions.

nts are selected on the basis of interest in and aptitude for nursing,
ermined by pre-entrance test, high school records, personal interviews,
t reports, and character references.

ption of Program

ractical Nurse Education program is taught in a 4-quarter period of
om instruction and supervised nursing practice.

ing a period of classroom instruction in fundamentals of nursing,
inciples from the basic biological and social sciences, the student
es nursing skills under faculty supervision in the hospital areas. The
advances in her studies, and in the nursing care of patients of all
rough planned assignments in medical-surgical Nursing, care of the
and newborn infant, and the care of the sick child.

earning opportunities are planned with the obstetrician and pedia-
for observations in offices and a public health clinic.

duate practical nurse is eligible to take, and must pass, the North
Board of Nursing Licensing exam for practical nurses in order to
in North Carolina.

N is qualified and prepared to function in a variety of situations:
s, nursing homes, clinics, doctors' offices, private duty nursing,

and in public health programs. In all situations the LPN functions und
supervision of a registered nurse and/or a licensed physician.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter

	C	L
PSY 1101 Human Relationship	3	0
PNE 1001 Personal and Community Health	2	0
PNE 1002 Basic Sciences	5	2
PNE 1003 Fundamentals of Practical Nursing	6	4
ENG 1102 Communicative Skills	3	
PNE 1004 Clinical Experience I	0	
	19	6

Second Quarter

	C	L
PNE 1105 Medical—Surgical Nursing I	4	
PNE 1006 Maternity Nursing	4	
PNE 1007 Pediatric Nursing	4	
PNE 1008 Clinical Experience II	0	
	12	

Third Quarter

	C	L
PNE 1009 Medical-Surgical Nursing II	7	
PNE 1010 Drugs and Drug Administration	3	
PNE 1011 Clinical Experience III	0	
	10	

Fourth Quarter

	C	L
PNE 1012 Advanced Medical-Surgical Nursing III	7	
PNE 1013 Mental Health	3	
PNE 1014 Vocational Adjustment	2	
PNE 1015 Clinical Experience IV	0	
	12	

Tot

°Seminar
C=Class Hrs. Per Week L=Lab Hrs. Per Week CL=Clinical Hrs.
CH=Credit Hrs. Per Quarter

MECHANICAL OCCUPATIONS

AIR CONDITIONING AND REFRIGERATION MECHANICS

pose of Curriculum

recent years the use of air conditioning and refrigeration equipment
increased tremendously. Practically all new building construction for
ess and commercial use have "all year" comfort systems. Many homes
have air conditioning and the trend is toward greater use of "all year"
ms of cooling and heating. The food industry is requiring greater use
frigeration systems in freezing, storage, and display of products. With
great upswing in the use of air conditioning and refrigeration equipment,
ater demand is made on trained personnel to install, operate, maintain
ervice this equipment.

is curriculum is designed to give the students practical knowledge that
enable them to become capable service men in the industry. The
iple objective has been to outline the required technical and related
ction to enable them to understand the basic principles involved in
onstruction, operation, and maintenance of equipment. Job opportunities
with commercial companies that specialize in air conditioning, auto-
heating, sheet metal and commercial refrigeration installation and
e. The service man is employable in areas of sales, maintenance,
ation and in the growing fields of truck and trailer refrigeration.

escription

air conditioning and refrigeration mechanic installs, inspects, main-
services and repairs domestic and commercial equipment. Connects
, compressors, temperature controls, humidity controls, and circu-
fans to control panels: Tests systems, observes pressure and vacuum
; and adjusts controls to insure proper operation.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter

AHR 1121 Principles of Refrigeration . . . .
MAT 1101 Fundamentals of Mathematics . . . .
ENG 1101 Reading Improvement . . . .
PHY 1101 Applied Science . . . .
DFT 1104 Blueprint Reading: Mechanical . . . .

Second Quarter

AHR 1122 Domestic and Commercial Refrigeration . . . .
MAT 1102 Algebra . . . .
ENG 1102 Communication Skills . . . .
ELC 1102 Applied Electricity . . . .
DFT 116 Blueprint Reading: Air Conditioning . . . .

Third Quarter

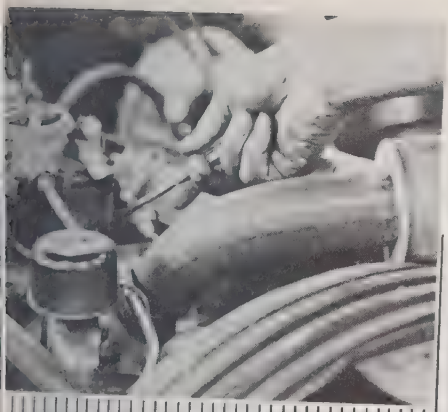
AHR 1123 Principles of Air Conditioning . . . .
AHR 1128 Automatic Controls . . . .
PSY 1101 Human Relations . . . .
WLD 1101 Basic Gas Welding . . . .

Fourth Quarter

AHR 1124 Air Conditioning and Refrigeration Servicing . . . .
AHR 1126 All Year Comfort System . . . .
MEC 1120 Duct Construction and Maintenance . . . .
BUS 1103 Small Business Operations . . . .

°"Manipulative laboratory" involves development of skills and job proficier
of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit H



AUTOMOTIVE MECHANICS

ose of Curriculum

is curriculum provides a training program for developing the basic ledge and skills needed to inspect, diagnose, repair or adjust auto- ve vehicles. Manual skills are developed in practical shop work. ough understanding of the operating principles involved in the modern nobile comes in class assignments, discussion, and shop practice.

mplexity in automotive vehicles increases each year because of scientif- covery and new engineering. These changes are reflected not only in nger vehicles, but also in trucks, buses and a variety of gasoline- red equipment. This curriculum provides a basis for the student to are and adapt to new techniques for servicing and repair as vehicles anged year by year.

escription

tomobile mechanics maintain and repair mechanical, electrical, and parts of passenger cars, trucks, and buses. In some communities and areas they also may service tractors or marine engines and other ne-powered equipment. Mechanics inspect and test to determine the of faulty operation. They repair or replace defective parts to restore hicle or machine to proper operating condition. They use shop ls and other technical publications.

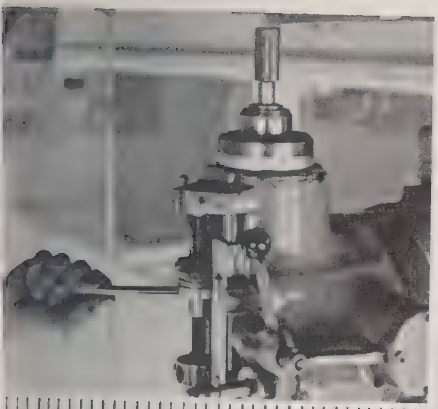
omotive mechanics in smaller shops usually are general mechanics ied to perform a variety of repair jobs. A large number of automobile nics specialize in particular types of repair work. For example, some ecialize in repairing only power steering and power brakes, or auto- ransmissions. Usually such specialists have an all-round knowledge of tive repair and may occasionally be called upon to do other types of

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE	
First Quarter	**C**
PME 1101 Internal Combustion Engines	
MAT 1101 Fundamentals of Mathematics	
ENG 1101 Reading Improvement	
PHY 1101 Applied Science	
	1
Second Quarter	**C**
PME 1102 Engine Electrical and Fuel Systems	
ENG 1102 Communications Skills	
DFT 1101 Schematics and Diagrams: Power Mechanics	
PHY 1102 Applied Science	
	1
Third Quarter	**C**
AUT 1123 Automotive Chassis and Suspension Systems	
AUT 1121 Braking Systems	
PSY 1101 Human Relations	
AHR 1101 Automotive Air Conditioning	
WLD 1101 Basic Gas Welding	
Fourth Quarter	**C**
AUT 1124 Automotive Power Train Systems	
AUT 1125 Automotive Servicing	
BUS 1103 Small Business Operations	

*"Manipulative laboratory" involves development of skills and job proficienc
of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs



MACHINIST TRADE

ose of Curriculum

is curriculum was prepared to meet a definite need for training of inists. Surveys recently completed in North Carolina show that many e existing industries lack time and facilities for training enough inists to meet present and planned needs. Expanding industries already ed in our State and new industries under development invariably ss the need for skilled craftsmen who have the background knowledge otential to advance.

s guide is designed to give learners the opportunity to acquire basic and the related technical information necessary to gain employment uild a profitable career in the machine shop industry in the State. It nprised of the joint views of committees responsible for its development.

escription

machinist is a skilled metal worker who shapes metal parts by using ne tools and hand tools. His training and experience enable him to nd carry through all the operations needed in turning out a machined t and to switch readily from one kind of product to another. A nist is able to select the proper tools and material required for each l to plan the cutting and finishing operations in their proper order so can complete the finished work according to blueprint or written ations. He makes standard shop computations relating to dimensions k, tooling, feeds, and speeds of machining. He often uses precision ing instruments such as micrometers and gages to measure the y of his work to thousandths of an inch.

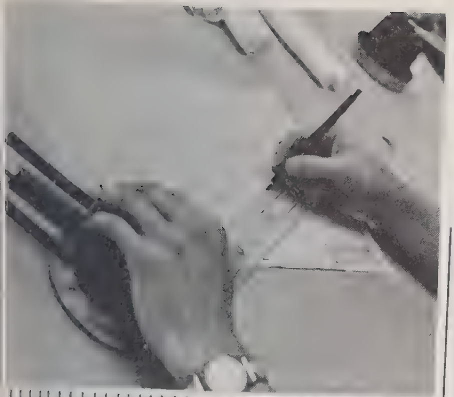
skilled worker must be able to set up and operate most types of e tools. The machinist also must know the composition of metals he can heat and quench cutting tools and parts to improve machin- His wide knowledge enables him to turn a block of metal into an e, precise part.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE	
First Quarter	C
MEC 1101 Machine Shop Theory and Practice	
MAT 1101 Fundamentals of Mathematics	
DFT 1104 Blueprint Reading: Mechanical	
ENG 1101 Reading Improvement	
PHY 1101 Applied Science	
	1
Second Quarter	C
MEC 1102 Machine Shop Theory and Practice	
MAT 1103 Geometry	
DFT 1105 Blueprint Reading: Mechanical	
PHY 1102 Applied Science	
ENG 1102 Communication Skills	
	1
Third Quarter	C
MEC 1103 Machine Shop Theory and Practice	
MEC 1115 Treatment of Ferrous Metals	
DFT 1106 Blueprint Reading: Mechanical	
MAT 1104 Trigonometry	
PSY 1101 Human Relations	
	1
Fourth Quarter	C
MEC 1104 Machine Shop Theory and Practice	
MEC 1116 Treatment of Non-Ferrous Metals	
WLD 1101 Basic Gas Welding	
MAT 1123 Machinist Mathematics	
BUS 1105 Industrial Organizations	
	1

"Manipulative laboratory" involves development of skills and job proficiency. of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.



MECHANICAL DRAFTING

ose of Curriculum

is curriculum is designed to prepare students to enter the field of anical drafting. The first two quarters contain courses basic to all of drafting. The third and fourth quarters contain specialization and d courses that prepare one to enter mechanical drafting occupations.

ch course is prepared to enable an individual to advance rapidly in ng proficiency upon entering the field of work. Courses are arranged quence to develop drafting skills and proficiency in mathematics and ce. The draftsman associates with many levels of personnel—admini-ve, architects, engineers, skilled workmen—and must be able to com-ate effectively with them. Courses to develop knowledge and skills in nunication, human relations, economics and industrial organization rovided to assist the student in developing understandings and con-e in his relations with other persons.

escription

ftsman prepares clear, complete, and accurate working plans and drawings, from rough or detailed sketches or notes for engineering or acturing purposes, according to the specified dimensions: makes final of the proposed drawing, checking dimension of parts, materials to d, the relation of one part to another, and the relation of the various o the whole structure. Makes any adjustments or changes necessary ired. Inks in lines and letters on pencil drawings as required. Exer-nanual skill in the manipulation of triangle, T-square, and other g tools. Lays tracing paper on drawing and traces drawing in pencil Makes charts for representation of statistical data. Makes finished from sketches. Utilizes knowledge of various machines, engineering es, mathematics, building materials, and other physical sciences to te the drawings.

Mechanical draftsman performs the general duties of a draftsma also specializes in making rough drafting sketches of proposed mec devices, and then drawing necessary details. Prepares accurate scale ings of parts or machines from specifications.

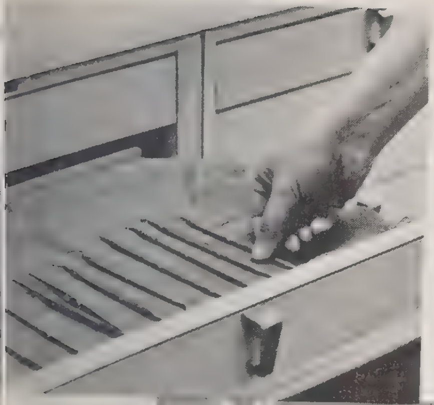
SUGGESTED CURRICULUM BY QUARTERS

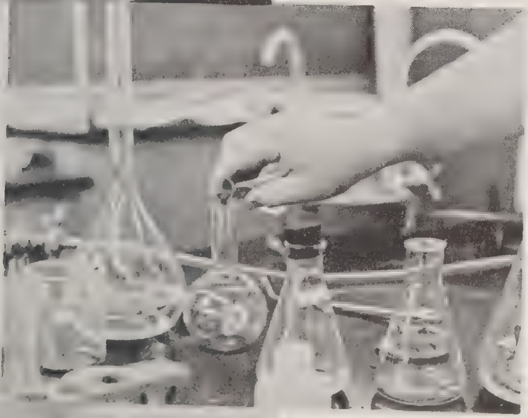
COURSE TITLE	
First Quarter	**C**
DFT 1121 Drafting	
MAT 1103 Geometry	
ENG 1101 Reading Improvement	
PHY 1101 Applied Science	
	1
Second Quarter	**C**
DFT 1122 Drafting	
DFT 1125 Descriptive Geometry	
MAT 1102 Algebra	
ENG 1102 Communication Skills	
PHY 1102 Applied Science	
	1
Third Quarter	**C**
DFT 1131 Mechanical Drafting	
MAT 1104 Trigonometry	
PSY 1101 Human Relations	
MEC 1113 Shop Processes	
MEC 1115 Treatment of Ferrous Metals	
	1
Fourth Quarter	**C**
DFT 1132 Mechanical Drafting	
MEC 1114 Shop Processes	
MEC 1116 Treatment of Non-Ferrous Metals	
BUS 1105 Industrial Organizations	
	1

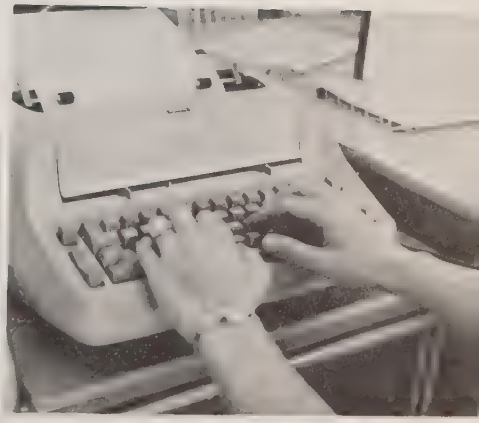
°"Manipulative laboratory" involves development of skills and job proficienc of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

COURSES OF INSTRUCTION







AIR CONDITIONING AND REFRIGERATION

.HR 101 Fundamentals of Refrigeration I 4 3° 5

erminology, laws of refrigeration, absolute pressure and absolute temperature, gy conversion units; specific heat, latent heat, and sensible heat; measurement of in quantity and intensity; tone of refrigeration, pressure temperature relationships, sfer of heat by conduction, convection and radiation; elementary refrigeration, geration cycle and refrigerant controls. Tools, materials and methods applicable to onditioning, and refrigeration.
equisite: None.

HR 102 Fundamentals of Refrigeration II 3 6° 5

efrigerants and their application in commercial refrigeration; system components, ssories, installation procedures and techniques; diagnosing service problems of ıanical difficulties; methods of defrosting; and making sketches of designs for high, um, and low temperature installation. Symbols for refrigeration and piping equip- will be used in making sketches.
quisites: T-AHR 101, T-PHY 101.

IR 103 Commercial Refrigeration Systems Design
3 6° 5

ocedures of load calculating used in commercial refrigeration. Various types of llations are studied with emphasis on the product to be cooled, the desired eratures to be maintained, and humidity conditions. Problems involving system ce and component capacity. Use of heat load charts, pipe sizing tables, manu- red data, and specification sheets.
quisite: T-AHR 102.

.R 201 Heating Principles 3 4 5

rm air systems, heat emitters, electric heating, forced hot water and steam g systems including selection and sizing of equipment—registers, grills, furnaces, s. radiators, baseboards, piping, and ducts. Fuels and burners used in supplying or various types of heating systems—coal, oil, natural gas, manufactured gas, d petroleum gas, and electricity. Experiments in equipment selection, installation, ing, and servicing will be conducted. Heating layout and specifications for an g structure or one in blueprint stage will be prepared.
uisites: T-PHY 101, T-DFT 102.

R 202 Fuels and Burners 2 3° 3

nced course in heating systems with emphasis on new types of fuels and s. Demonstrations and experiments with mock-ups and sample systems of gas, l and electrical installations. Experiments in equipment selection, installation, naintenance will be conducted.
isite: T-AHR 201.

203 Air-Conditioning Principles 5 6° 7

ntroduction to air distribution. Humidity, saturated and unsaturated mixtures; metric charts and graphs; specific heat and air flow calculations, heat load

calculations, the state of mixture of two air streams, bypass factor and dehumidifi
Prerequisite: T-AHR 103.

T-AHR 209 Air-Conditioning System Design 5 6

Self-contained units, remote units, unitary systems and control systems. water units, air duct units, high velocity duct units. Air and/or water-cooled sy centrifugal pressure systems, conventional systems, absorption systems, air-handli filtering systems.
Prerequisites: T-AHR 203, T-AHR 201.

T-AHR 210 Installation and Design Problems 2 6

This course will consist of making drawings from designs that emphasize com refrigeration and air-conditioning layouts. Information is gathered, calculatio made, schematic drawings are prepared, and specifications written for the sp installations.
Prerequisites: T-DFT 226, T-AHR 203.

T-AHR 216 Circuits and Controls I 3 3

Electric, electronic and pneumatic controls as related to ventilation, refrigeratio air-conditioning systems. Practice in layouts, including symbols and schematic dia Laboratory work in installations of control systems. Test instruments and the System adjustments for proper operation.
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103.

T-AHR 217 Circuits and Controls II 3 3

Practice in layouts, selection, installation and trouble-shooting of conve refrigeration and air conditioning control systems. Class and laboratory work i control of residential and commercial heating and air conditioning systems. problems of mechanical refrigeration, zone and central-fan systems. Unit heate ventilators, peripheral air conditioning units and radiant-panel heating are s
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103, T-AHR 216.

T-AHR 227 Estimating and Contracts 3 6

Cost estimation, plans and specifications, equipment take-off, materials t labor take-off, sub-contractors' estimates, overhead cost, and bid and contract proc
Prerequisites: T-AHR 203, T-DFT 226.

T-AHR 230 Seminar and Research 1 4

Successful completion of the Air-Conditioning and Refrigeration Technology cu lum is climaxed by the student conducting a research project and writing a re this project. The student, through consultation with the instructors, will cho individual project that will, when feasible, involve an actual installation. F conferences with instructor will guide the student in the progress of research the preparation of the report.
Prerequisites: T-AHR 201, T-AHR 216, T-AHR 203.

AHR 1101 Automotive Air Conditioning 2 3

General introduction to the principles of refrigeration; study of the assembly

›onents and connections necessary in the mechanisms, the methods of operation, control; proper handling of refrigerants in charging the system.
equisite: PHY 1102.

1121 Principles of Refrigeration 3 12 7

introduction to the principles of refrigeration, terminology, the use and care of and equipment, and the identification and the function of the component parts of em. Other topics to be included will be the basic laws of refrigeration; characteristics omparison of the various refrigerants; the use and construction of valves, fittings, asic controls. Practical work includes tube bending, flaring and soldering. Standard dures and safety measures are stressed in the use of special refrigeration service ment and the handling of refrigerants.
quisite: None.

122 Domestic and Commercial Refrigeration 3 9 6

nestic refrigeration servicing of conventional, hermetic, and absorption systems. et care, controls, and system maintenance in domestic refrigerators, freezers, and w air conditioning units is stressed. Commercial refrigeration servicing of display ts, walk-in cooler and freezer units, and mobile refrigeration systems is studied. se of manufacturers' catalogs in sizing and matching system components and a of controls, refrigerants, servicing methods is made. The American Standard Code for Refrigeration is studied and its principles practiced.
uisite: AHR 1121.

123 Principles of Air Conditioning 3 12 7

k includes the selection of various heating, cooling and ventilating systems, gation and control of factors affecting air cleaning, movement, temperature, and ty. Use is made of psychrometric charts in determining needs to produce m temperature and humidity control. Commercial air conditioning equipment mbled and tested. Practical sizing and balancing of ductwork is performed as

uisite: AHR 1122.

124 Air Conditioning and Refrigeration Servicing
3 6 5

asis is placed on the installation, maintenance, and servicing of equipment the cleaning, changing, humidification and temperature control of air in an litioned space. Installation of various ducts and lines needed to connect various ents is made. Shop work involves burner operation, controls, testing and adjusting conditioning and refrigeration equipment, and location and correction of ent failure.
isite: AHR 1123.

26 All Year Comfort Systems 3 6 5

ary equipment used in conjunction with refrigeration systems to provide both and cooling for "all year" comfort will be studied and set up in the laboratory. ll will be oil fired systems, gas fired systems, water circulating systems, and resistance systems. Installation of heat pumps will be studied along with techniques. Reversing valves, special types of thermostatic expansion valves.

systems of de-icing coils, and electric wiring and controls are included in the
Prerequisites: AHR 1123, AHR 1128.

AHR 1128 Automatic Controls 3 6

Types of automatic controls and their function in air conditioning systems. Inc in the course will be electric and pneumatic controls for domestic and commerical and heating; zone controls, unit heater and ventilator controls, commerci systems controls, commercial refrigeration controls, and radiant panel controls.
Prerequisites: ELC 1102, AHR 1122.

ART (ART)

T-ART 105 History of Art 3 0

A study of the origins and development of art forms from the beginning t contemporary. Lecture discussion documented with paintings, sculpture, reprod and films.
Prerequisite: None.

T-ART 106S Art History 4 0

A survey and analysis of major trends in architecture, painting, and sculp Western civilization. Pre-historic, Egyptian, ancient Near East, Aegean, Greek, Et Roman, early Christian, Byzantine, Islamic, early medieval, Romanesque, and art.

T-ART 107S Art History 4 0

A continuation of T-ART 106S. Renaissance, Mannerist, Baroque, Neo- Romantic, Realist, Impressionest, Post-impressionest, Expressionest, cubist, non-o art, and twentieth century art are covered.

AUTOMOTIVE (AUT)

AUT 1121 Braking Systems 3 3

A complete study of various braking systems employed on automobiles and ligh truck. Emphasis is placed on how they operate, proper adjustment, and
Prerequisite: PHY 1102.

AUT 1123 Automatic Chassis and Suspension Systems
3 9

Principles and functions of the components of automotive chassis. Practi instruction in adjusting and repairing of suspension, and steering systems. Uni studied will be shock absorbers, springs, steering systems, steering linkage, a end and alignment.
Prerequisite: PME 1102.

AUT 1124 Automotive Power Train Systems 3 9

Principles and functions of automotive power train systems: clutches, tran

, torque converters, drive shaft assemblies, rear axles and differentials. Identification
oubles, servicing, and repair.
quisites: PHY 1102, AUT 1123.

1125 Automotive Servicing 3 9 6

phasis is on the shop procedures necessary in determining the nature of troubles
oped in the various component systems of the automobile. Troubleshooting of
notive systems, providing a full range of experiences in testing, adjusting, repairing
eplacing.
quisites: AUT 1123, AUT 1121, AHR 1101.

BUSINESS ADMINISTRATION (BUS)

101 Introduction to Business 5 0 5

rvey of the business world with particular attention devoted to the structure of
rious types of business organization, methods of financing, internal organization,
anagement.
uisite: None.

102 Typewriting 2 3 3

duction to the touch typewriting system with emphasis on correct techniques,
of the keyboard, simple business correspondence, tabulation, and manuscripts.
isite: None.

103 Typewriting 2 3 3

ction emphasizes the development of speed and accuracy with further mastery
t typewriting techniques. These skills and techniques are applied in tabulation,
ript, correspondence, and business forms.
isite: T-BUS 102 or the equivalent. Speed requirement, 30 words per minute
five minutes.

104 Typewriting 2 3 3

asis on production typing problems and speed building. Attention to the
nent of the student's ability to function as an expert typist, producing mailable
The production units are tabulation, manuscript, correspondence, and business

site: T-BUS 103 or the equivalent. Speed requirement, 40 words per minute
for five minutes.

05S Advanced Typewriting 2 3 3

se to train the student who possesses basic skills to produce with efficiency
en work that would be acceptable in the most exacting business offices. The
earns to think independently regarding style and method.
ite: Permission of Department Head.

06 Shorthand 3 2 4

nning course in the theory and practice of reading and writing shorthand.

Emphasis on phonetics, penmanship, word families, brief forms, and phrases.
Prerequisite: None.

T-BUS 107 Shorthand 3 2

Continued study of theory with greater emphasis on dictation and ele
transcription.
Prerequisite: T-BUS 106 or the equivalent.

T-BUS 108 Shorthand 3 2

Theory and speed building. Introduction to office style dictation. Empha
development of speed in dictation and accuracy in transcription.
Prerequisite: T-BUS 107.

T-BUS 110 Office Machines 2 2

A general survey of the business and office machines. Students will receive
in techniques, processes, operation and application of the ten-key adding ma
full keyboard adding machines, and calculator.
Prerequisite: None.

T-BUS 112 Filing 3 0

Fundamentals of indexing and filing, combining theory and practice by the
miniature letters, filing boxes and guides. Alphabetic, Triple Check, Automati
graphic, Subject, Soundex, and Dewey Decimal filing.
Prerequisite: None.

T-BUS 115 Business Law 3 0

A general course designed to acquaint the student with certain fundament
principles of business law, including contracts, negotiable instruments, and a
Prerequisite: None.

T-BUS 116 Business Law 3 0

Includes the study of laws pertaining to bailments, sales, risk-bearing, part
corporation, mortgages, and property rights.
Prerequisite: T-BUS 115.

T-BUS 120 Accounting 5 2

Principles, techniques and tools of accounting, for understanding of the m
of accounting. Collecting, summarizing, analyzing, and reporting informatio
service and mercantile enterprises, to include practical application of the p
learned.
Prerequisite: T-MAT 110.

T-BUS 121 Accounting 5 2

Partnership and corporation accounting including a study of payrolls, fede
state taxes. Emphasis is placed on the recording, summarizing and interpreti
for management control rather than on bookkeeping skills. Accounting serv
shown as they contribute to the recognition and solution of management p
Prerequisite: T-BUS 120.

S 122S Accounting 5 0 5

poration accounting including study of issuing stock, subscriptions to stock and ption of stock. Long-term obligations and investments of corporations. Accounting partments and branches. Study of manufacturing operations and process cost a.

quisites: T-BUS 121

S 123 Business Finance 3 0 3

ancing of business units, as individuals, partnerships, corporations, and trusts. A d study is made of short-term, long-term, and consumer financing.

uisite: T-ECO 104

124 Business Finance 3 0 3

ncing, federal, state, and local government and the ensuing effects upon the y. Factors affecting supply of funds, monetary and credit policies.

uisite: T-BUS 123.

182M Anatomy 3 0 3

sic study of the general plan of the body and the nine systems, including common s and health deviations.

uisite: none

183M Terminology and Vocabulary 3 0 3

evelop an understanding of the terminology and vocabulary appropriate to the f study, as it is used in business, technical, and professional offices.

isite: T-BUS 107.

183T Terminology and Vocabulary 3 0 3

velop an understanding of the terminology and vocabulary appropriate to the f study, as it is used in business, technical, and professional offices.

site: T-BUS 107.

205 Advanced Typewriting 2 3 3

asis is placed on the development of individual production rates. The student e techniques needed in planning and in typing projects that closely approximate s appropriate to the field of study. These projects include review of letter ethods of duplication, statistical tabulation, and the typing of reports, manu- d legal documents.

ate: T-BUS 104. Speed requirement, 50 words per minute for five minutes.

06M Dictation and Transcription 3 2 4

ps the skill of taking dictation and of transcribing at the typewriter materials te to the course of study, which includes a review of the theory and the of familiar and unfamiliar material at varying rates of speed. Minimum rate of 100 words per minute required for five minutes on new material.

te: T-BUS 108.

T-BUS 206T Dictation and Transcription 3 2

Develops the skill of taking dictation and of transcribing at the typewriter ma appropriate to the course of study, which includes a review of the theory ar dictation of familiar and unfamiliar material at varying rates of speed. Mir dictation rate of 100 words per minute required for five minutes on new material
Prerequisite: T-BUS 108.

T-BUS 207M Dictation and Transcription 3 2

Covering materials appropriate to the course of study, the student develo accuracy, speed, and vocabulary that will enable her to meet the stenographic re ments of business and professional offices. Minimum dictation rate of 110 wor minute required for five minutes on new material.
Prerequisite: T-BUS 206M.

T-BUS 207T Dictation and Transcription 3 2

Covering materials appropriate to the course of study, the student develo accuracy, speed, and vocabulary that will enable her to meet the stenographic r ments of business and professional offices. Minimum dictation rate of 110 wo minute required for five minutes on new material.
Prerequisite: T-BUS 206.

T-BUS 208M Dictation and Transcription 3 2

Principally a speed building course, covering materials appropriate to the co study, with emphasis on speed as well as accuracy. Minimum dictation rate words per minute required for five minutes on new material.
Prerequisite: T-BUS 207.

T-BUS 208T Dictation and Transcription 3 2

Principally a speed building course, covering materials appropriate to the co study, with emphasis on speed as well as accuracy. Minimum dictation rate of 12 per minute required for five minutes on new material.
Prerequisite: T-BUS 207.

T-BUS 211 Office Machines 2 2

Instructions in the operation of the bookkeeping-accounting machines, dup equipment, and the dictating and transcribing machines.
Prerequisite: T-BUS 110.

T-BUS 214 Secretarial Procedures 3 2

Designed to acquaint the student with the responsibilities encountered by a s during the work day. These include the following: receptionist duties, handl mail, telephone techniques, travel information, telegrams, office records, pu of supplies, office organization, and insurance claims.
Prerequisite: None.

T-BUS 215M Office Application 6 0

During the sixth quarter only, students are assigned to work in a business, t

rofessional office for six hours per week. The objective is to provide actual work
rience for secretarial students and an opportunity for the practical application of
skills and knowledge previously learned, according to the course of study.
quisites: T-BUS 214, T-BUS 205, T-BUS 208, T-BUS 211.

S 215T Office Application 6 0 6

ring the sixth quarter only, students are assigned to work in a business, technical,
ofessional office for six hours per week. The objective is to provide actual work
ience for secretarial students and an opportunity for the practical application of
kills and knowledge previously learned, according to the course of study.
uisites: T-BUS 214, T-BUS 205, T-BUS 208, T-BUS 211.

S 217 Business Law 3 0 3

study of the powers, policies, methods, and procedures used by the various
l. state and local administrative agencies in promoting and regulating business
rises. It includes a consideration of the constitutional and statutory limitations
se bodies and judicial review of administrative action.
uisite: T-BUS 116.

219 Credit Procedures and Problems 3 0 3

ciples and practices in the extension of credit; collection procedures; laws
ing to credit extension and collection are included.
isite: T-BUS 120.

225 Cost Accounting 3 2 4

re and purposes of cost accounting; accounting for direct labor, materials, and
burden; job cost, and standard cost principles and procedures; selling and
tion cost; budgets, and executive use of cost figures.
isite: T-BUS 121.

6S Payroll Records and Accounting 3 0 3

dy in the preparation of the payroll which includes: (1) Figuring basic wages,
ucting for taxes (FICA, FUTA, and Federal Income Taxes), and (3) Making
y journal entries, as well as other problems encountered in preparing the

site: BUS 121

29 Taxes 3 2 4

ation of federal and state taxes to various businesses and business conditions.
of the following taxes: income, payroll, intangible, capital gain, sales and use,
d inheritance.
ite: T-BUS 121.

32 Sales Development 3 0 3

of retail, wholesale and specialty selling. Emphasis is placed upon mastering
ving the fundamentals of selling. Preparation for and execution of sales
tions required.
te: None.

T-BUS 233 Personnel Management 3 0

Principles of organization and management of personnel, procurement, plac training, performance checking, supervision, remuneration, labor relations, benefits and security.
Prerequisite: None.

T-BUS 235 Business Management 3 0

Principles of business management including overview of major functions of m ment, such as planning, staffing, controlling, directing, and financing. Clarifica the decision-making function versus the operating function. Role of managem business—qualifications and requirements.
Prerequisite: None.

T-BUS 237 Wholesaling 3 0

The development of wholesaling; present day trends in the United States. A of the functions of wholesaling.
Prerequisite: None.

T-BUS 239 Marketing 5 0

A general survey of the field of marketing, with a detailed study of the fu policies, and institutions involved in the marketing process.
Prerequisite: None.

T-BUS 243 Advertising 3 2

The role of advertising in a free economy and its place in the media of ma munications. A study of advertising appeals; product and market research; sele media; means of tesing effectiveness of advertising. Theory and practice of advertising copy for various media.
Prerequisite: None.

T-BUS 245 Retailing 3 0

A study of the role of retailing in the economy including development of retail structure, functions performed, principles governing effective operati managerial problems resulting from current economics and social trends.
Prerequisite: None.

T-BUS 247 Business Insurance 3 0

A presentation of the basic principles of risk insurance and their application. of the various types of insurance is included.
Prerequisite: None.

T-BUS 255 Interpreting Accounting Records 3 0

Designed to aid the student in developing a "use understanding" of ac records, reports and financial statements. Interpretation, analysis, and utiliz accounting statements.
Prerequisite: T-BUS 121.

S 266 Budget and Record Keeping 3 0 3

e basic principles, methods, and procedures for preparation and operation of ets. Special attention is given to the involvement of individual departments and the they play. Emphasis on the necessity for accurate record keeping in order to ate the effectiveness of budget planning.
uisite: T-BUS 121.

S 271 Office Management 3 0 3

sents the fundamental principles of office management. Emphasis on the role of management including its functions, office automation, planning, controlling, zing and actuating office problems.
uisite: None.

272 Principles of Supervision 3 0 3

oduces the basic responsibilities and duties of the supervisor and ationship to superiors, subordinates, and associates. Emphasis on securing an e work force and the role of the supervisor. Methods of supervision are stressed.
uisite: None.

284M Terminology and Vocabulary 3 0 3

ter emphasis on an understanding of the terminology and vocabulary appropriate course of study, as it is used in business, technical, and professional offices.
uisite: T-BUS 183M.

300S Current Trends in Business 2 4 4

gned to aid the student to become more aware of current trends in the business hrough reading, reporting, and informal discussions.
isite: Advance standing in Business Administration

02 Typewriting 2 3 3

ginning course in touch typewriting, with emphasis on correct techniques, of the keyboard, simple business correspondence, and tabulation.
site: None.

3 Small Business Operations 3 0 3

roduction to the business world, problems of small business operation, basic law, business forms and records, financial problems, ordering and inventorying, f equipment and offices, methods of improving business, and employer- relations.
ite: None.

5 Industrial Organizations 3 0 3

ls, techniques, and practices of modern management in planning, organizing olling operations of a manufacturing concern. Introduction to the competitive d the factors constituting product cost.
te: None.

CHEMISTRY (CHM)

T-CHM 101 Chemistry 4 2

Study of the physical and chemical properties of substances, chemical cl
elements, compounds, gases, chemical combinations; weights and measurements;
of metals; acids, bases, salts, solvents, solutions, and emulsions. In addition, st
carbohydrates; electrochemistry, electrolytes, and electrolysis in their applica
chemistry to industry.
Prerequisite: T-MAT 101.

T-CHM 102 Chemistry 4 2

General course in inorganic chemistry. Properties of acids, salts, bases, and so
Chemical and physical properties of selected inorganic elements are studied in
Laboratory work will consist of various inorganic tests and experiments.
Prerequisite: T-CHM 101.

T-CHM 111 General Chemistry 4 3°

An introductory chemistry course involving chemical terminology, atomic st
properties of some elements, and the function of the periodic table. Properties
pounds and mixtures are studied as are types of chemical reactions. Laborato
consists of various inorganic reactions and preparations.
Prerequisite: None.

T-CHM 112 General Chemistry 4 3

A study of the properties of elements not covered in T-CHM 101 and a s
greater depth of the combining properties of the elements including equivalent
Laboratory work includes chemical reactions and an investigation of prope
solutions.
Prerequisite: T-CHM 111.

T-CHM 113S General Chemistry III 4 3

A continuation of T-CHM 112. The different families of elements are stu
detail, with emphasis on their sources, refining processes and chemical pr
Laboratory work will emphasize the properties of the different families of e
Prerequisite T-CHM 112.

T-CHM 121 Quantitative Chemical Analysis 3 6

Emphasis is placed on developing laboratory techniques employed in the vo
analysis of acids and bases. The students will become thoroughly familiar
principles and procedures of neutralization titration. Classroom work will e
the stoichiometric calculations involved in interpreting the results of analysis. L
work will consist of percentage analysis of selected substances.
Prerequisite: T-CHM 112.

T-CHM 222 Quantitative Chemical Analysis 2 9

The more complex types of quantitative analysis. Special emphasis on th
of oxidation-reduction and gravimetric analysis. Instrumental analysis is introd

modern analytical devices is stressed. The student will become familiar with the les of redox reactions, ionization constants and pH of solutions. Stress is placed stoichiometric calculations of quantitative chemical analysis. Classroom work ments quantitative determinations in the laboratory.
uisite: T-CHM 121.

I 227 Physical Chemistry 3 2 4

ic theory, states of matter, chemical thermodynamics, molecular properties of is, equilibria, phase role, electrochemistry, kinetics, surface chemistry, and emistry constitute major areas of study.
uisite: T-CHM 121.

231 Organic Chemistry 3 6 5

nclature, structure, preparation, properties, and reactions of aliphatic organic nds. Laboratory work emphasizes techniques.
isite: T-CHM 222.

232 Organic Chemistry 3 6 5

nomenclature, structure, preparation, properties, and reactions of aromatic compounds. Laboratory work emphasizes techniques and involves preparation ysis of selected organic compounds.
sites: T-CHM 231, T-CHM 227.

233S Organic Chemistry III 3 6 5

inuation of T-CHM 232. Polymers and other macro molecules will be studied with some emphasis on synthetic textile fibers. Laboratory work will be around Polymers.
ite T-CHM 232.

41 Industrial Chemical Analysis 3 9 6

ustrial laboratory situation is simulated. Principles and techniques learned is quarters are utilized in solution of problems common to local industry. It e responsibility of the instructor to determine and submit in outline form a of suitable scope and sequence of topics which he will work out from con- with his local advisory committee, representing the industry. This program pproved by the administration and accepted by the appropriate State-level

es: T-CHM 222, T-CHM 227.

2 Industrial Chemical Analysis 3 12 7

strial laboratory situation is maintained and the emphasis on instrumentation Problems of industrial quality control. Plant visitations.
: T-CHM 241.

0S Qualitative Inorganic Analysis 2 4 4

principles involved in separation and identification of the more common nions. Laboratory practice in identifying the ions in a variety of unknowns.
s: T-CHM 111 and T-CHM 112.

COMMERCIAL ART (CAT)

T-CAT 101 Advertising Principles 3 0

A comprehensive survey of the history and development of advertising incl discussion of its economic and social values. An introduction to advertising me current publications in the field.
Prerequisite: None.

T-CAT 105 Life Study 2 3

A study of the body structure with emphasis on the skeletal and muscular movement and the aging process. Graphical interpretation and response to liv with emphasis on proportioning, masses and movement.
Prerequisite: None.

T-CAT 106 Life Study 0 6

Graphical interpretation and response to the live model covering topics proportioning, the aging process, character, expression and draping the mo course will deal with building of the figure and such ingredients.

T-CAT 110 Industrial Illustration 2 6

A comprehensive approach to the tools, equipment, materials and utilizati illustration. Laboratory exercises and problems covering such topics as r photographs, product illustrations, production illustrations, renderings, prepa visual charts, graphs and composites.
Prerequisite: T-DFT 102.

T-CAT 116 Photography 2 6

An introduction to the field of photography, photographic equipment and A study of the fundamental techniques of the camera and its expressive possi relation to the field of design and visual communications. Assigned camera darkroom procedures and equipment.
Prerequisite: None.

T-CAT 121 Commercial Art & Advertising Design 3 9

An introduction to drawing and basic design fundamentals and principles. is placed on line, two-and three-dimensional shapes, letter indication, perspective, light and shade, equipment and materials of the art and design
Prerequisite: None.

T-CAT 122 Commercial Art & Advertising Design 3 9

Advanced material in drawing, basic design, lettering, equipment and Emphasis placed on two and three-dimensional form, perspective, sketching, finished lettering. Laboratory will consist of assigned graphical problems wi and discussion by class participation.
Prerequisite: T-CAT 121.

123 Commercial Art & Advertising Design 3 9 6

duction to layout and design for printing. Mechanics of layout, properties of nd basic reproductive processes. Laboratory exercises will consist of preparation prehensive art form for presentation on magazine covers, trademarks, book textile designs, furniture designs, two-and three-dimensional display figures. d graphical problems with critique and discussion by class members.
isites: T-CAT 122, T-DFT 102.

205 Advertising Copywriting 3 0 3

dy of the techniques used in creating effective advertising copy for various media; purposes and duties of the copywriter and legal problems encountered writing. Theory and practice will be given in writing copy for the various cluding retail and fashion copy, mail order, direct mail, business publications, d television.
site: T-ENG 103.

12 Advertising Illustration 1 3 2

roduction to advertising illustration through problems in shape, space, and lysis. Laboratory exercises will explore the use of various media.
ite: T-CAT 123.

13 Advertising Illustration 1 3 2

ed work and assigned problems in advertising illustration. The student is explore a variety of mediums.
te: T-CAT 212.

4 Advertising Illustration 1 3 2

d problems in advanced illustration. Emphasis is placed on originality and ness of the student to explore assigned graphical tasks and problems.
ite: T-CAT 213.

7 Photography 2 6 4

d photographic techniques and materials. Participation in studio and procedures illustrating the various applications and creative possibilities of y in advertising.
se: T-CAT 116.

4 Commercial Art & Advertising Design 3 9 6

duction to cartooning, intermediate layout and design techniques for aboratory assigned graphical problems will cover such topics as color halftones, and materials for the development of posters, show cards, banners, d documents, brochures and folders.
: T-CAT 123.

Commercial Art & Advertising Design 3 9 6

problems in layout and design techniques for printing, illustration,

cartooning, animation, display design and lettering. Laboratory and graphic p dealing with magazine and book illustrations, the fashion figure, outdoor sign displays and exhibits for business and industry.
Prerequisite: T-CAT 224.

T-CAT 226 Commercial Art & Advertising Design 3 9

A course providing simulated professional working conditions utilizing a layout and design techniques for printing. Each student will explore a v problems, and present his solutions for general class critique and discussi course will climax with the review and presentation of the student's i portfolio of professional work.
Prerequisite: T-CAT 225.

T-CAT 231 Painting with Polymers 2 6

An introduction to the medium: a study of the techniques used in pair illustration with the relatively new acrylic polymer emulsions. Students m projects or complete assigned projects.
Prerequisite: None.

T-CAT 235 Advertising Art Direction 5 0

A study of the techniques used in creating effective advertising for variou media. The physical consideration of the advertisement such as size, positi frequency of insertion, layout, coupons and inquiries. Analysis of technique in national, retail, mail order, industrial and professional advertising with con given to budgetary practices.
Prerequisites: T-CAT 101, T-CAT 225.

CYBERNETICS (CYB)

T-CYB 201 Introduction to Electromechanical Systems 3 2

An introduction to electromechanical systems, sub-systems, and compone sensing, measuring, and control devices, including fluid power, electrical, mechanical, and optical devices.
Prerequisites: T-ELN 101 101, T-PHY 102.

T-CYB 202 Electromechanical Systems 3 6

Analysis of sensing devices, including pressure, temperature, humidity, ac velocity, displacement, force, and other transducers. Survey of associat circuitry. Open and closed loop electromechanical systems. Laboratory incl in the mintenance of electromechanical devices.
Prerequisite: T-CYB 201

T-CYB 203 Electromechanical Systems 3 6

Systems design employing electromechanical components, sub-systems, a System synthesis and analysis. Application of electrical, mechanical and systems to process and machine tool design.
Prerequisite: T-CYB 202

DENTAL (DEN)

1001 Introduction to Dental Assisting 2 0 2

introduction to the history of dental assisting, the modern role of the dental
nt in practice and in relation to other members of the dental health team, and
rsonal and ethical requirements for safe and effective practice.
uisite: None.

1002 Dental Materials 2 9 5

tification of dental materials, characteristics of each, evaluation of quality, and
les and procedures related to manipulation and storage of various dental
ls.
isite: None.

003 Preclinical Sciences I 3 3 4

information from bacteriology, anatomy and physiology, and oral and dental
as related to dental science and the practice of dental assisting. Designed as
nts which may be scheduled for either concurrent or sequential teaching.
isite: None.

04 Preclinical Sciences II 4 0 4

mental information from oral pathology, pharmacology, nutrition, and common
cies as related to the role of the dental assistant. Designed in four units to
lexibility in scheduling.
site: DEN 1003.

05 Dental Accounting 3 2 4

mentals of accounting as applied to dental office procedures. Practice in
on of principles to various forms commonly used in the dental office.
ite: None.

6 Clinical Procedures I 5 9 8

les and procedures related to radiology, dental instruments and equipment,
side techniques of dental assisting. Designed in three units for flexibility in
g.
ite: DEN 1002.

Clinical Procedures II 5 6 7

the dental assistant in various dental specialties, such as endodontics,
s, orthodontics, prosthodontics, and oral surgery.
e: DEN 1006.

Dental Office Management 4 3 5

s and procedures related to management of the dental office, including
e of inventories, ordering of supplies, patient records, financial records,
ointments and establishing favorable patient relations.
: DEN 1005.

DEN 1009 Dental Office Practice I 0 12

Introduction to practice in the dental office or dental clinic, emphasis i
role of the dental assistant in the operatory in a variety of dental procedures.
Prerequisite: DEN 1008.

DEN 1010 Dental Office Practice II 0 30

Practice in the dental office or dental clinic; rotation of assignments to e
experience in office management, the dental laboratory, and the operatory, Em
chairside assisting in a variety of clinical procedures.
Prerequisite: DEN 1009.

DEN 1011 Dental Assistant Seminar 1 0

Study of personal responsibilities as a practitioner, including employee
relations, opportunities for continued development as a person and as a healt
and importance of organization membership.
Prerequisite: None.

DRAFTING (DFT)

T-DFT 101 Technical Drafting 1 6

The field of drafting is introduced as the student begins study of drawing
and practices for print reading and describing objects in the graphic lang
skills and techniques of drafting included are: use of drafting equipment
freehand orthographic and pictorial sketching, geometric construction, o
instrument drawing of principal views, and standards and practices of di
The principles of isometric, oblique, and perspective are introduced.
Prerequisite: None.

T-DFT 102 Technical Drafting 1 6

The application of orthographic projection principles to the more comp
problems, primary and secondary auxiliary views, simple and successive
and sections and conventions will be studied. Most important is the intr
the graphical analysis of space problems. Problems of practical desig
involving points, lins, planes, and a combination of these elements shall
Dimensioning practices for "details" and "working drawings," appro
American Standards Association will also be included. Introduction is giv
sections and developments of various types of geometrical objects.
Prerequisite: T-DFT 101.

T-DFT 103 Technical Drafting 1 6

Intersection and developments and their practical solutions. Where
model solutions accompany the problems. The various techniques employe
and render isometric and oblique drawings, isometric, dimetric and trimetric
will be included.
Prerequisite: T-DFT 102.

T 201 Technical Drafting 2 6 4

lications and constructions of charts, graphs, and nomographs in engineering and al data. Screw threads, springs, keys, rivets, piping, and welding symbols, ds of representing and specifying will be covered. Basic mechanisms of motion r. gears and cams, will be studied and drawn with emphasis on methods of ring, calculating, dimensions, and delineating.
uisite: T-DFT 103.

204 Descriptive Geometry 2 4 4

hic analysis of space problems involving points, lines, planes, connectors, and bination of these. Practical design problems will be stressed with analytical tion where applicable. Visualization shall be stressed on every problem.
isites: T-DFT 102, T-MAT 102.

205 Design Drafting I 2 6 4

design is introduced in the study of motion transfer mechanisms as they relate er trains. Principles of design sketching, design drawing, layout drafting, from layouts, production drawings and simplified drafting practices constitute study. Types and methods of specifying materials and workmanship are an part of the course.
isites: T-DFT 204, T-MAT 102, T-PHY 102.

206 Design Drafting II 2 6 4

rch to solve a problem in design by consulting various manuals, periodicals, ough laboratory experiments. A written technical report, preliminary design layout drawings, detail drawings, assembly and sub-assembly drawings, drawings, exploded pictorial assembly, patent drawings and specifications are as a part of the problem.
ites: T-DFT 205, T-DFT 210.

11 Mechanisms 3 2 4

natical and drafting room solutions of problems involving the principles of elements. Study of motions of linkage, velocities and acceleration of points link mechanism; layout methods for designing cams, belts, pulleys, gears and s.
tes: T-DFT 201 & 204, T-MAT 103, T-PHY 106.

2 Jig and Fixture Design 2 6 4

cial standards, principles, practices and tools of jig and fixture design. project and design work to acquaint students with the types of jigs and d their design.
es: T-DFT 205, T-DFT 211.

Air-Conditioning Systems Drawing 0 6 2

of air-conditioning systems and study of related architectural and structural sheet metal intersections and developments and types of duct installation. oning and refrigeration layouts, diagrams, and schematics.
s: T-DFT 102, T-AHR 103, T-AHR 201, T-AHR 216.

DFT 1101 Schematics & Diagrams: Power Mechanics 0 3

Interpretation and reading of blueprints. Development of ability to read and i blueprints, charts, instruction and service manuals, and wiring diagrams. Info on the basic principles of lines, views, dimensioning procedures, and notes.
Prerequisite: None.

DFT 1104 Blueprint Reading: Mechanical 0 3

Interpretation and reading of blueprints. Information on the basic principl blueprint; lines, views, dimensioning procedures and notes.
Prerequisite: None.

DFT 1105 Blueprint Reading: Mechanical 0 3

Further practice in interpretation of blueprints as they are used in industry; prints supplied by industry; making plans of operations; introduction to draft procedures; sketching as a means of passing on ideas, information and
Prerequisite: DFT 1104.

DFT 1106 Blueprint Reading: Mechanical 0 3

Advanced blueprint reading and sketching as related to detail and drawings used in machine shops. The interpretation of drawings of complex mechanisms for features of fabrication, construction and assembly.
Prerequisite: DFT 1105.

DFT 1116 Blueprint Reading: Air Conditioning 1 3

A specialized course in drafting for the heating, air conditioning and re student. Emphasis will be placed on reading of blueprints that are comm trade; blueprints of mechanical components, assembly drawings, wiring dia schematics, floor plans, heating system plans including duct and equipm plans, and shop sketches. The student will make tracings of floor plans a air conditioning systems.
Prerequisite: DFT 1122.

DFT 1121 Drafting 3 12

An introduction to drafting and the study of drafting practices. Instruction the selection, use and care of instruments, singlestroke lettering, applied freehand sketching consisting of orthographic and pictorial drawings. O projection, reading and instrument drawing of principal views, single auxil (primary), and double (oblique) auxiliary views will be emphasized. Dimens note practices will be studied with reference to the American Standards practices. Methods of reproducing drawings will be included at the appro
Prerequisite: None.

DFT 1122 Drafting 3 6

The trainee will study simple and successive revolutions and their app practical problems. Sections and conventions will be studied and both assembly sections will be drawn. Intersections and developments will be relating the drawing to the sheet metal trades. Models of the assigned draw from construction paper, cardboard, or similar materials as a proof of the solution problems drawn.

thods of drawing and projecting axonometric, oblique, and perspective drawings e studied with emphasis on the practical applications of pictorial drawings. us methods of shading will be introduced and dimensioning and sectioning of e and axonometric pictorials will be done.

uisite: DFT 1121.

1125 Descriptive Geometry

2 3 3

phical analysis of space problems. The problems deal with practical design ts involving points, lines, planes, connectors, and a combination of these. ed are problems dealing with solid geometry theorems. Where applicable, each cal solution shall be accompanied by the analytical solution.

uisite: DFT 1121.

131 Mechanical Drafting

3 12 7

ntroduction to mechanical drafting beginning with problems concerning precision nt dimensioning. Methods of fastening materials, and fasteners: keys, rivets, , and welding. Symbols will be studied and drawings will be made involving ems. Principles of design will be introduced with the study of basic mechanisms on transfer; gears, cams, power trains, pulleys, belting and methods of specifying lculating dimensions will be studied. Drawings will be made involving these isms.

isite: DFT 1122.

32 Mechanical Drafting

3 12 7

ples of design sketching, design drawings, layout drafting, detailing from rawings, production drawings and simplified drafting practices constitute areas Forging and casting drawings will be made from layouts. Specifications, parts bill of materials are emphasized in this course. The student will develop a set of working drawings of a tool, jig, fixture or simple machine and learn s of design, handbook and manual usage.

site: DFT 1131.

ECONOMICS (ECO)

02 Economics

3 0 3

ndamental principles of economics including the institutions and practices people gain a livelihood. Included is a study of the laws of supply and and the principles bearing upon production, exchange, distribution, and ion both in relation to the individual enterprise and to society at large.

te: None.

4 Economics

3 0 3

depth in principles of economics, including a penetration into the composition of national output, distribution of income, international trade and finance. t economic problems.

e: T-ECO 102.

T-ECO 106 Economics of Transportation 3 0

Acquaints the student with the economic aspects of transportation. Compl
cussion from the earliest form of basic transportation to our present comple
of transportation. In addition to the historical approach, consideration is
the economic factors involved in plant location and principles involved in pre
developments of transportation.
Prerequisite: T-ECO 102.

T-ECO 108 Consumer Economics 3 0

Designed to help the student use his resources of time, energy, and mone
the most out of life. It gives the student an opportunity to build useful
buying, managing his finances, increasing his resources, and to understand b
economy in which he lives.
Prerequisite: None.

ELECTRICAL (ELC)

T-ELC 101 Fundamentals of Electricity 4 4 or 6

Elementary principles of electricity including: basic electric units, O
Kirchhoffs law, network theorems, magnetics, basic electrical measuring ins
inductance, capacitance, sine wave analysis, and non-resonant resistive,
and capacitive networks.
Prerequisite: None.

T-ELC 102 Fundamentals of Electricity 4 4 or 6

Series and parallel resonant-circuit analysis, resonant and non-resonant t
analysis, basic diode power supply analysis, introduction to non-linear resistiv
devices, and introduction to electro-mechanical devices.
Prerequisite: T-ELC 101.

T-ELC 201 Electrical Machinery 3 0

A course in the basic understanding and application of electricity t
industrial machinery. Included is a study of direct current motors, motor co
protecting devices, transformers, and the industrial applications of this e
Prerequisite: T-PHY 103.

T-ELC 210 Rotating Devices 2 2

Introduction to electrical machinery. AC and DC motor and generator
synchros and servomechanism, alternators and dynamotors, Ward-Leonard
plidyne control systems will be analyzed. A general knowledge of the theory,
and maintenance of these devices and systems will be stressed.
Prerequisites: T-ELC 102, T-PHY 102.

ELC 1102 Applied Electricity 2 3

The use and care of test instruments and equipment used in servicing
apparatus for air conditioning and refrigeration installations. Electrical pri
procedures for trouble-shooting of the various electrical devices used in air c

ng, and refrigeration equipment. Included will be transformers, various types of
rs and starting devices, switches, electrical heating devices and wiring.
quisite: PHY 1101.

1112 Direct and Alternating Current 5 15 10

tudy of the structure of matter and the electron theory, the relationship between
;e, current and resistance in series, parallel and series-parallel circuits. Analysis
ect current circuits by Ohm's law and Kirchhoff's law; sources of direct current
:ials. Fundamental concepts of alternating current flow; a study of reactance,
ance, phase angle, power and resonance and alternating current circuit analysis.
quisite: None.

ELECTRONIC DATA PROCESSING (EDP)

P 101 Functional Wiring Principles 2 3 3

oles of wiring necessary to perform basic machine functions of printing, punching,
ring and selection. A series of laboratory experiments support the theoretical
of this course.
uisite: None.

102 Functional Wiring Principles 2 3 3

tional study of the fundamental principles of wiring necessary to perform basic
e functions of printing, punching, comparing and selection with emphasis on the
ring machine. A series of laboratory experiments support the theoretical aspects
course.
uisite: T-EDP 101.

03S Concepts of Data Processing 4 0 4

rvey of the manual, automatic, and electronic methods of processing data as
to business systems.

104 Introduction to Data Processing Systems 3 2 4

umental concepts and operational principles of data processing systems, as an
eveloping a basic knowledge of computers, prerequisite to the detail study of
r computer problems. This course is a prerequisite for all programming

site: None.

06 Business Programming 2 4 4

fective use of data processing equipment in meeting the information needs of
utilizing the symbolic programming system as a tool in the solution of
. The scope of the problems developed will vary from a modest payroll
to the total information retrieval for a large and complex business.
ites: T-EDP 101, T-MAT 101, E-EDP 104.

08 Scientific Programming 2 4 4

d to provide the student with sufficient knowledge of programming concepts
may easily master any specific system with a minimum of instruction. The

student will analyze, evaluate and make minor program modifications. (Specifi
are treated in detail so that the student may learn advanced programming an
decision making techniques as applied in sophisticated systems.)
Prerequisites: T-EDP 106, T-MAT 102.

T-EDP 202 Programming System Techniques 3 4

The student will investigate the functions and capabilities of different data p
machines and will become familiar with some of the procedures nece
programming objectives. Programming drills, exercises and case studies will
realism of processing data to theoretical knowledge.
Prerequisites: T-EDP 102, T-EDP 104, T-EDP 108.

T-EDP 205 Linear Programming and Critical Path Method
4 2

Lecture and case problems encompassing the scope and potential of using m
cal programming with computers to increase industrial efficiency. This cours
the network technique of management planning, scheduling and control. Basi
network planning are presented with laboratory assignments designed to i
the theoretical aspects of Critical Path Methods (CPM).
Prerequisites: T-EDP 108, T-MAT 103, T-EDP 202.

T-EDP 208 Advance Programming Techniques 2 6

Detail analysis and study of computer software, mathematical modeling, s
and game theory. Designed to present an overview of the more complex
applications which have been designed to facilitate decision making.
Prerequisites: T-EDP 108, T-EDP 205.

T-EDP 211 Procedures and Techniques of Automated Design
4 4

Designed to acquaint the student with existing techniques used to evalua
and determine the existing relationships between isolated events and rea
the objective function. CPM, PERT, PEP and COGO are discussed in gr
and new concepts and procedures are hypothesized and developed.
Prerequisites: T-MAT 214, T-BUS 225, T-EDP 108, T-EDP 205.

T-EDP 216 Research Project 1 8

Individual assignments of a carefully selected project will be the work of t
during this quarter. It will give the student an opportunity to initiate and
project taken from outside the school. This course places the responsibility
student to solve a significant problem with a minimum of assistance
instructor.
Prerequisite: T-EDP 205.

T-EDP 219 Systems and Procedures 3 4

A study of the problems of system design and installation. Systems used
type businesses are studied and discussed. Actual practice is given by th
Practical application in the preparation of a full-length report is requir
student at the end of the term. This report must have to do with somet
chosen curriculum.
Prerequisite: T-ENG 102.

260S Introduction to the IBM 360 3 0 3

study of the characteristics of the IBM 360 computer. Topics studied include -output equipment, data representation, and programming systems with special asis on assembly level programming and a selected compiler level language.

ELECTRONICS (ELN)

N 101 Electronic Instruments and Measurements

1 4 or 6 3

udy of basic electronic instruments, their theory of operation, function, tolerances, libration. Both service and laboratory instruments will be studied. Laboratory nce will provide application of each type instrument studied.
uisite: T-ELC 102.

105 Control Devices 5 4 or 6 7

dy in depth of the electrical characteristics of vacuum tubes and transistors. arameters and applications of each type device to the three configurations of a erminal two port system will be included.
isite: T-ELC 102.

201 Industrial Controls 3 2 4

trial controls is the study of modern methods of controlling machinery by ic circuitry. Machinery controls and electronic mechanisms that automatically machines will be studied. Types of motors, generators, control signals and thyratrons, gates, switches, and servomechanism circuits are major areas of

site: T-PHY 103.

205 Applications of Vacuum Tubes and Transistors

5 4 or 6 7

l applications of vacuum tubes and transistors to basic audio amplifiers, uency amplifiers, detectors, modulators and oscillators.
ite: T-ELN 105.

10 Semiconductor Circuit Analysis 5 2 or 3 6

y in some depth of the analysis and design of transistor circuits. Network and equivalent circuits are used extensively in evaluating total circuit ice. Device peculiarities and limitations pertinent to reliable operations are d. H. Y. Z. and T. parameters are employed as well as signal-flow graphs.
te: T-ELN 105.

14 Wave Shaping and Pulse Circuits 2 2 or 3 3

und amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, mplifiers, clipper and clamper circuits.
tes: T-ELN 105, T-MAT 103.

T-ELN 215 Wave Shaping and Pulse Circuits 2 2 or 3

Pulse techniques, diode switches, gates, step-counters, restorers and oth
circuits which function as switches.
Prerequisite: T-ELN 214.

T-ELN 220 Electronic Systems 5 4 or 6

A block diagram course investigating numerous electronic systems. M
blocks of various circuits already studied are arranged in various manners t
complex electronic systems. Systems will be explained and reduced to fun
then to block diagrams. AM, FM, and Single Sideband transmitters and
multiplexing, TV transmitters and receivers, pulse-modulated systems,
telemetry, navigational systems, sonar and radar will be considered.
Corequisite: T-ELN 215.

T-ELN 225 Transmission and Propagation 3 0

An introduction to the electromagnetic radiation, principles of antenna
patterns and field strength. The characteristics and use of transmission lin
frequency application. Factors involved in propagation, ground waves,
sky waves, atmospheric effects, ionosphere, fading, noise, static, wire radiato
gain, effect of ground, impedance, antenna systems and arrays.
Prerequisite: T-ELN 105.
Corequisite: T-ELN 205.

T-ELN 227 UHF and Microwave Systems 5 4

A study of UHF and VHF components, circuits, and measurement techn
use of distributed constant elements, waveguides and coaxial cables, micro
high frequency oscillators, magnetrons, klystrons, traveling wave tubes. An i
to the use of the Smith Chart.
Prerequisite: T-ELN 225.

T-ELN 230 Television Systems 4 6

A study of the principles of television including the television system, ca
scanning and synchronization, composite video signal, receiver circuits,
equipment, color television, and closed-loop systems.
Corequisite: T-ELN 214.

T-ELN 235 Industrial Instrumentation 4 6

Broad introduction to use of industrial electro-mechanical and electro
and equipment. Provides an understanding of the methods, techniques
required for installation, service and operation of a variety of industrial cont
Analysis of sensing devices for detecting changes in pressure, temperatur
sound, light, electricity, the associated circuitry and indicating and record
Prerequisites: T-ELN 205, T-PHY 104.

T-ELN 240 Digital Computers 3 0

An exploration into the methodology of counting and computing. Vario
techniques will be investigated including: non-sinusoidal waveforms,
decade counters, industrial counters, readout devices, logic circuits, arithm

ge devices, input-output devices, computer control, analog and digital converters. quisite: T-ELN 214.

N 245 Electronic Design Project 0 4 2

dents are required to design and construct a project approved by the instructor. tes selection of project, design, construction, and testing of completed project. ts may include: AM or FM transmitters or receivers, amplifiers, test equipment, l devices, simple counters, lasers, masers, etc. quisite: T-ELN 205.

ENGLISH

101 Grammar 3 0 3

gned to aid the student in the improvement of self-expression in grammar. The ch is functional with emphasis on grammar, diction, sentence structure, punctua- nd spelling. Intended to stimulate students in applying the basic principles of grammar in their day-to-day situations in industry and social life. uisite: None.

102 Composition 3 0 3

gned to aid the student in the improvement of self-expression in business and al composition. Emphasis is on the sentence, paragraph, and whole composition. isite: T-ENG 101.

103 Report Writing 3 0 3

undamentals of English are utilized as a background for the organization and ues of modern report writing. Exercises in developing typical reports, using techniques and graphic devices are completed by the students. Practical on in the preparation of a full-length report is required of each student at the term. This report must have to do with something in his chosen curriculum. site: T-ENG 102.

204 Oral Communication 3 0 3

ly of basic concepts and principles of oral communications to enable the to communicate with others. Emphasis is placed on the speaker's attitude, diction, voice, and the application of particular techniques of theory to eaking habits and to produce effective oral presentation. Particular attention o conducting meetings, conferences, and interviews. ite: T-ENG 101.

06 Business Communication 3 0 3

ps skills in techniques in writing business communications. Business reports, s of business conferences, letters involving credit, collections, adjustments, s, orders, acknowledgments, remittances, and inquiry. te: T-ENG 102.

T-ENG 208 Reading Enrichment 3 0

This course is designed to guide the student in a better understanding and a appreciation of our literary heritage.

In general, selected poetry, short stories, plays, and the novel will be Emphasis will be given to some of the influential and outstanding wri their contributions.

Prerequisites: None.

ENG 1101 Reading Improvement 2 0

Designed to improve the student's ability to read rapidly and accurately machines are used for class drill to broaden the span of recognition, to inc coordination and word group recognition and to train for comprehension units.

Prerequisite: None.

ENG 1102 Communication Skills 3 0

Designed to promote effective communication through correct language speaking and writing.

Prerequisite: ENG 1101.

ENG 1103 Report Writing 3 0

Fundamentals of correct language usage applied to report writing. Emph principles of report construction and application to various report forms.

Prerequisite: ENG 1102.

T-ISC 201 Industrial Organization and Management 3 0

Organizational structure for industrial management; operational and financial including accounting, budgeting, banking, credit and industrial risk, fore markets, selection and layout of physical facilities; selection, training and sup personnel as found in typical industrial organizations.

Prerequisite: None.

T-ISC 202 Quality Control 3 2

Principles and techniques of quality control and cost saving. Organiz procedure for efficient quality control. Functions, responsibilities, struct reports, records, personnel and vendor-customer relationships in qualit Sampling inspections, process control and tests for significance.

Prerequisite: None.

T-ISC 203 Motion Study 3 2

Types of methods studies and their applications. Process charts, analy time study, work simplification, skill and effort rating.

Prerequisite: None.

T-ISC 204 Value Analysis 3 0

The modern concept in the control of manufacturing production. This provide the students an opportunity to study a production system with t se of identifying unnecessary costs. The objective of the concepts and techniques lue analysis is to make possible a degree of effectiveness in identifying and ving unnecessary cost by the use of sound decisions through a common sense ach.

quisite: None.

209 Plant Layout 3 2 4

ractical study of factory planning with emphasis on the most efficient arrangements rk areas to achieve lower manufacturing costs. Layouts for small and medium- plants, layout fundamentals, selection of production equipment and materials ng equipment. Effective management of men, money and materials in a manu- ng operation.

uisites: T-MEC 201, T-DFT 102.

MATHEMATICS

101 Technical Mathematics 5 0 5

real number system is developed as an extension of natural numbers. Number of various bases are introduced. Fundamental algebraic operations, the lar coordinate system, as well as fundamental trigonometric concepts and ons are introduced. The application of these principles to practical problems is

site: Satisfactory evidence that admission requirements have been met.

102 Technical Mathematics 5 0 5

undamental concepts of analytical geometry, differential and integral calculus roduced. Topics included are graphing techniques, geometric and algebraic ation of the derivative, differentials, rate of change, the integral and basic on techniques. Applications of these concepts to practical situations are

site: T-MAT 102.

103 Technical Mathematics 5 0 5

ndamental concepts of analytical geometry, differential and integral calculus oduced. Topics included are graphing techniques, geometric and algebraic tion of the derivative, differentials, rate of change, the integral and basic on techniques. Applications of these concepts to practical situations are stressed.

ite: T-MAT 102.

10 Business Mathematics 5 0 5

ourse stresses the fundamental operations and their application to business Topics covered include payrolls, price marking, interest and discount, on, taxes, and pertinent uses of mathematics in the field of business.

te: None.

T-MAT 121 Numbering System and Boolean Algebra 4 0

A cursory treatment of the base-ten numbering system; functional introd numbering systems with bases other than 10, transformation from one s another; fundamental operation in systems other than the decimal; a detaile the binary system in relation to machine calculations; principles of Boolea and its contribution to digital devices and data processing.
Prerequisite: None.

T-MAT 201 Technical Mathematics 5 0

A continuation of T-MAT 103. More advanced concepts of differenti integration are considered. Included are graphs and derivatives of the trig functions, exponential and logarithmic differentiation and integration, adva gration techniques, polar equations, parametric equations and Fourier series.
Prerequisite: T-MAT 103.

T-MAT 208 Calculus and Laplace Transforms for Electronics 5 0

An investigation of the methods of calculus which are of the most direct study of electronic circuits. Introduction to selected topics from differential and Laplace transforms and applications of these methods to the solution of circuit problems.
Prerequisite: T-MAT 201.
Corequisite: T-ELN 214.

T-MAT 214 Statistics 5 0

The theory of statistics and its application in modern business. Kinds of that exist among random fluctuations. Experience in associating and using ma models to interpret physical phenomena and predicting the outcomes of e related to practical business problems.
Prerequisite: T-MAT 102.

T-MAT 215 Statistics 5 0

Practical experiences in the statistical solution of business problems th use of computers. Methods of organizing, presenting and interpreting data.
Prerequisite: T-MAT 214.

MAT 215S Statistical Programming 3 2

Practical experience in the statistical solution of business problems th use of computers. Measures of central tendency, variation, confidence inte of hypotheses, and relationships between variables calculated by programmin of organizing, analyzing, interpreting and presenting data are studied.
Prerequisite: T-MAT 214.

T-MAT 219 Differential Equations 5 0

Methods of solving first-order and simple higher order ordinary differentia and linear differential equations with constant coefficients; solution of equations by series; and numerical solutions of differential equations.
Prerequisite: T-MAT 201.

T 225 Numerical Analysis 5 0 5

evelopment of the mathematical principles upon which many computing methods ased. Topics introduced include theory of errors, numerical integration and ntiation, summation procedures, numerical solution of equations, and approxi- as of various types.
uisite: T-MAT 201.

1101 Fundamentals of Mathematics 5 0 5

tical number theory. Analysis of basic operations: addition, subtraction, multipli- and division. Fractions, decimals, powers and roots, percentages, ratio and tion. Plane and solid geometric figures used in industry; measurement of s and volumes. Introduction to algebra used in trades. Practice in depth.
uisite: None.

102 Algebra 5 0 5

concepts and operations of algebra: historical background of our base-10 system; algebraic operations: addition, subtraction, multiplication and division; s. letter representation, grouping, factoring, ratio and proportions, variation; al and algebraic solution of first degree equations; solution of simultaneous us by: addition and subtraction, substitution, graphing, exponents, logarithms, nd interpolations.
isite: None.

103 Geometry 3 0 3

umental properties and definitions; plane and solid geometric figures, selected theorems, geometric construction of lines, angles and plane figures. Dihedral reas of plane figures, volumes of solids. Geometric principles are applied to erations.
site: None.

04 Trigonometry 3 0 3

ometric ratios; solving problems with right triangles, using tables, and inter- solution of oblique triangles using law of sines and law of cosines; graphs of nometric functions; inverse functions, trigonometric equations. All topics are o practical problems.
ite: MAT 1103.

5 Electrical Mathematics 5 0 5

oductory algebra course with trigonometry and vectors needed in alternating lgebraic operations of addition, subtraction, multiplication and division; use of d signs, grouping, factoring; exponents, ratios and proportions; algebraic and olutions of first-degree equations; introduction to trigonometric functions, hs and applications to right triangles, addition, subtraction and resolution of antities.
te: None.

3 Electrical Mathematics 5 0 5

ng knowledge of the powers of 10, Ohm's law for series and parallel circuits,

quadratic equations, Kirchhoff's Laws, trigonometric functions, plane vect
nating currents, vector algebra and logarithms.
Prerequisite: MAT 1115.

MAT 1123 Machinist Mathematics 3 0

Introduces gear ratio, lead screw and indexing problems with emphasis on
to the machine shop. Practical applications and problems furnish the tra
experience in geometric propositions and trigonometric relations to shop
concludes with an introduction to compound angle problems.
Prerequisite: MAT 1104.

MECHANICAL (MEC)

T-MEC 101 Machine Processes 0 6°

An introductory course designed to acquaint the student with basic
safety procedures and machine processes of our modern industry. It will inclu
of measuring instruments, characteristics of metals and cutting tools. T
will become familiar with the lathe family of machine tools by performi
operations such as turning, facing, threading, drilling, boring, and reaming.
Prerequisite: None.

T-MEC 102 Machine Processes 0 6°

Advanced operations on lathe, drilling, boring and reaming machines. Milli
theory and practice. Thorough study of the types of milling machines, cutt
fixture devices, and the accessories used in a modern industrial plant. S
operational shop is stressed.
Prerequisite: T-MEC 101.

T-MEC 103 Machine Processes 0 6°

Modern machine tools of industry. Theory and practice with shaper, slo
turret lathe, screw machine, grinding and finishing machines. Gear desi
processes of gear manufacturing.
Prerequisite: T-MEC 102.

T-MEC 110 Fundamental Mechanisms 2 4

A study of the purpose and actions of cams, cables, gear trains, different
belts, pulleys, shafts, levers, and other mechanical devices used to transmi
signals.
Prerequisite: T-PHY 102.

T-MEC 116 Engineering Materials 3 0

Study and testing of the properties of ferrous and non-ferrous metals
load and strain measurements, behavior of materials under load, qualities
strength and control of the properties of the materials.
Prerequisite: T-PHY 102.

IEC 201 Machine Processes 2 6 4

lewer concepts of work handling and automatic machining process. Chipless luction and new techniques in metal forming. Analysis of high-energy forming, asonic machining, electrolytic metal removal, chemical milling, numerical controls simplified building block numerical control systems.
equisite: T-MEC 103.

EC 205 Strength of Materials 3 2 4

idy of principles and analysis of stresses which occur within machine and structure ents subjected to various types of loads such as static, impact, varying and mic. Analyses of these stresses are made as applied to thin-walled cylinder and res, riveted and welded joints, beams, columns and machine components.
quisites: T-PHY 106, T-MAT 102.

EC 210 Physical Metallurgy 3 3° 4

roductory course in metallurgy, a basic study of the properties of metals and . Analysis of the structure of metals and alloys, atomic structure, nuclear structure, nuclear reactions. Solid (crystalline) structures, methods of designating crystal s, liquid and vapor phases, phase diagrams, and alloy systems
quisite: T-PHY 101.

C 211 Physical Metallurgy 3 3° 4

perties of metals and alloys, the reactions of metals, diffusion, carburizing, metal ng and homogenization, recrystallization and grain growth, age hardening, nitriding, al oxidation, heat treatment of steel, laboratory experiments and demonstrations.
quisite: T-MEC 210.

C 212 Practical Automation 3 2 4

omprehensive study of automation as it is interpreted and practiced by American y of today. The fundamentals of automation and its effects in industrial tivity, labor supply and demand, equipment and processes. Students will roblems encountered while installing an automated system.
uisite: None.

213 Production Planning 3 3° 4

to-day plant direction; forecasting, product planning and control, scheduling, hing, routing, and inventory control. Case histories are discussed in the classroom, urses of corrective action are developed. Drafting room layouts for planning trol.
isite: T-DFT 102.
site: T-MEC 201.

214 Tool Engineering 3 0 3

troduction to the problems of tool engineering with emphasis on planning the s of production, designing and developing the necessary tools, and utilizing manufacturing facilities; practical analysis and comparison of the use and tools, jigs and fixtures, dies, molds, and gauges as they are utilized in our day manufacturing and production methods. Prerequisites: T-DFT 102, T-MEC

T-MEC 235 Hydraulics and Pneumatics 3 3°

The basic theories of hydraulic and pneumatic systems. Combinations of in various circuits. Basic designs and functions of circuits and motors, c electrohydraulic servomechanisms, plumbing, filtration, accumulators and re
Prerequisite: T-PHY 102.

T-MEC 237 Control Systems 2 4

Hydraulic, pneumatic, mechanical, electrical and electronic control syste components. Basic description, analysis and explanation of operation. Typi formance characteristics, limitations on performance, accuracy, applications a utilization in industrial processes.
Prerequisites: T-PHY 102, T-ELC 201.

MEC 1101 Machine Shop Theory and Practice 3 12

An introduction to the machinist trade and the potential it holds for c Deals primarily with the identification, care and use of basic hand tools and measuring instruments. Elementary layout procedures and processes of lat press, grinding (off-hand) and milling machines will be introduced both in th practice.
Prerequisite: None.

MEC 1102 Machine Shop Theory and Practice 3 12

Advanced operations in layout tools and procedures, power sawing, dr surface grinder, milling machine shaper. The student will be introduced to operations on the cylindrical grinder and will select projects encompassin operations, tools and procedures thus far used and those to be stressed throu course.
Prerequisite: MEC 1101.

MEC 1103 Machine Shop Theory and Practice 3 12

Advanced work on the engine lathe, turning, boring and threading grinders, milling machine and shaper. Introduction to basic indexing and te with additional processes on calculating, cutting and measuring of spur, he worm gears and wheels. The trainee will use precision tools and measuring in such as vernier height gages, protractors, comparators, etc. Basic exercises wil on the turret lathe and on the tool and cutter grinder.
Prerequisite: MEC 1102.

MEC 1104 Machine Shop Theory and Practice 3 12

Development of class projects using previously learned procedures in blueprint reading, machine operations, final assembly and inspection. processes on the turret lathe, tool and cutter grinder, cylindrical and surfac advanced milling machine operations, etc. Special procedures and operations, and equipment, observing safety procedures faithfully and establishing of g habits and attitudes acceptable to the industry.
Prerequisite: MEC 1103.

MEC 1113 Shop Processes 2 3

Study of practices used in metalworking shops: introduction to how ma

tilized, and to the processes of shaping, forming and fabricating of metals. nstration of the metalworking lathes, grinders, drills, milling machines, shapers, rs, saws, broachers, gear cutting machines and finishing machines. A study of the ilities of these machines.
uisite: None.

1114 Shop Processes 2 3 3

parison of the unit-production and mass-production systems. Casting, forging and processes, welding and sheet metal working processes are demonstrated and ed. Mass-production methods are studied in relationship to precision dimensional

uisite: MEC 113.

115 Treatment of Ferrous Metals 2 3 3

tigates the properties of ferrous metals and tests to determine their uses. ions will include some chemical metallurgy to provide a background for the anding of the physical changes and causes of these changes in metals. Physical rgy of ferrous metals, producing iron and steel, theory of alloys, shaping and heat treatments for steel, surface treatments, alloy of special steel, classification , and cast iron will be topics for study.
isite: None.

16 Treatment of Non-Ferrous Metals 2 3 3

uation of the study of physical metallurgy. The non-ferrous metals: bearing brass, bronze, lead), light metals (aluminum and magnesium), and copper and are studied. Power metallurgy, titanium, zirconium, indium and vanadium are in this course.
site: MEC 1115.

20 Duct Construction and Maintenance 3 6 5

of various duct materials including sheet steel, aluminum, and fiber glass. eet metal hand tools, cutting and shaping machines, fasteners and fabrication layout methods, and development of duct systems. The student will service uct systems and perform on the site repairs including ducts made of fiber tudy is made of duct fittings, dampers and regulators, diffusers, heater and rs, fans, insulation and ventilating hoods.
tes: DFT 1116, AHR 1123.
e: AHR 1126.

PHYSICS (PHY)

Physics: Properties of Matter 3 2 4

mental course covering several basic principles of physics. The divisions solids and their characteristics, liquids at rest and in motion, gas laws and . Laboratory experiments and specialized problems dealing with these topics this course.
: None.

T-PHY 102 Physics: Work, Energy, Power 3 2

Major areas covered in this course are work, energy, and power. Instruction i such topics as statics, forces, center of gravity, and dynamics. Units of meas and their applications are a vital part of this course. A practical approach is teaching students the use of essential mathematical formulas.
Prerequisites: T-MAT 101, T-PHY 101.

T-PHY 103 Physics: Electricity 3 2

Basic theories of electricity, types of electricity, methods of production, an mission and transforming of electricity. Electron theory, electricity by chemical electricity by friction, electricity by magnetism, induction voltage, amperage, re horsepower, wattage, and transformers are major parts of the course.
Prerequisites: T-MAT 102. T-PHY 101.

T-PHY 104 Physics: Light and Sound 3 2

A survey of the concepts involving wave motion leads to a study of so generation, transmission and detection. The principles of wave motion also s an introduction to a study of light, illumination and the principles involved i instruments. Application is stressed throughout.
Prerequisites: T-MAT 101, T-PHY 102.

T-PHY 106 Applied Mechanics 5 0

Concepts and principles of statics and dynamics. Parallel concurrent and n force systems in coplanar and noncoplanar situations. Concepts of centroids a of gravity, moments of inertia, fundamentals of kinetics, and kinematics of vel motion.
Prerequisites: T-MAT 102, T-PHY 102.

T-PHY 231 Fluid Mechanics 3 0

Fundamental laws of fluid flow and application of these laws to the sizing o cold water piping, steam piping, refrigerant piping, air ducts, pumps, and fans. emphasis will be directed to calculations of capacity, horsepower, and hea ments of pumps and fans; to comparison of the several methods of piping an sizing; and to methods of fluid flow measurement.
Prerequisites: T-MAT 103, T-PHY 102.

PHY 1101 Applied Science 3 2

An introduction to physical principles and their application in industry.

Topics in this course include measurement; properties of solids, liquids, a basic electrical principles.
Prerequisite: None.

PHY 1102 Applied Science 3 2

The second in a series of two courses of applied physical principles. Topics i in this course are heat and thermometry, and principles of force, motion, wo and power.
Prerequisite: PHY 1101.

POLITICAL SCIENCE (POL)

L 201 United States Government 3 0 3

tudy of government emphasis on basic concepts, structure, powers, procedures
roblems.
uisite: None.

POWER MECHANICS (PME)

101 Internal Combustion Engine 3 12 7

lopment of a thorough knowledge and ability in using, maintaining, and storing
ous hand tools and measuring devices needed in engine repair work. Study of
struction and operation of components of internal combustion engines. Testing of
performance; servicing and maintenance of pistons, valves, cams and camshafts,
l exhaust systems, cooling systems; proper lubrication; and methods of testing,
ing and repairing.
isite: None.

102 Engine Electrical and Fuel Systems 5 12 9

rough study of the electrical and fuel systems of the automobile. Battery
mechanism, generator, ignition, accessories and wiring; fuel pumps, carburetors,
l injectors. Characteristics of fuels, types of fuel systems, special tools, and
quipment for the fuel and electrical system.
site: PME 1101.

PRACTICAL NURSING (PNE)

01 Personal and Community Health 2 0 0 2

ourse is a study of total health and health habits and their effect on the
d, the family, and the environment in which they live. The study of health
available to all persons and selected agencies that may be visited for special

ite: None

2 Basic Sciences 5 2 0 6

urse is designed to give the student an understanding and appreciation of
nce principles and their relationship to practical nursing. The course includes
he structure and functions of the nine systems of the body, the basic principles
on which involves mechanics of digestion, absorption and metabolism,
requirements for all age groups both sick and well, and selected learning of
y as related to the prevention of diseases, promotion of health, and the
ponsibilities in protecting the patients and others from illness and/or

e: None

Fundamentals of Practical Nursing 6 4 0 8

l to assist the beginning Practical Nurse student in acquiring knowledge
ne development of skills needed for safe and effective bedside nursing

care. Body mechanics for nurse and patient. Laboratory practice in daily care of patients' medical and surgical aseptic needs.
Prerequisite: None

PNE 1004 Clinical Experience I 0 0 3

Beginning experiences in a general hospital under supervision of teachers, with opportunity to practice skills learned in the laborator understanding of role on the nursing team.
Corequisites: PSY 1101, PNE 1001, 1002, 1003

PNE 1005 Medical-Surgical Nursing I 4 0 0

Designed to give the student material basic to the beginning understa the nursing care of patients with common problems presented by Processes of illness, diagnostic tests, physiologic reaction to pain, n patients with long term illnesses, rehabilitation, pre and post operativ anesthesia agents, and modification of diet for disease condition.
Prerequisite: PNE 1001, 1002, 1003; PSY 1101, Eng 1102

PNE 1006 Maternity Nursing 4 0 0

Presentation of modern aspects of maternity nursing with emphasis o obstetrics. Detailed presentation of material on nursing care during an labor and postpartum periods. Care of the newborn baby and methods of new mothers. Emphasis is to provide better and safer care for the mother and her baby.
Prerequisites: PNE 1001, 1002, 1003; ENG 1102, PSY 1101

PNE 1007 Pediatric Nursing 4 0 0

Understanding of the scope and aims of modern nursing of children. differences in the child from the adult. Methods of answering the nee hospitalized child and his parents. Common disorders of children implications for nursing care. Nursing care of the seriously ill c emphasis on her role on the health team.
Prerequisites: PSY 1101, PNE 1001, 1002, 1003; ENG 1102

PNE 1008 Clinical Experience II 0 0 24

Further experience in basic areas of medical, surgical, pediatric, or obstetr Emphasis on observation of signs and symptoms and assuming respon reporting to head nurse.
Prerequisite: PNE 1004.

PNE 1009 Medical-Surgical Nursing II 6 0 0

Designed to develop knowledge of common disorders of body systems, care, socio-psychological implications. Included are the disorders of the system and respiratory system.
Prerequisite: PNE 1105.

PNE 1010 Drugs and Drug Administration 3 2 0

Designed to present knowledge of sources of drugs, their classification

nportance of observing for possible reactions. Develop in the laboratory skills in oral drugs. Develop knowledge of equipment and sterilization techniques used preparation and giving of injections; insulin therapy.
quisites: PNE 1005, 1006, 1007, 1008

1011 Clinical Experience III 1 0 24 9

ther experience in the practice of nursing skills. Continued experiences in the reas of medical-surgical nursing. Experience in giving oral and topical medications the direction of clinical teacher. Emphasis on observation of signs and symptoms king part in making nursing judgments in team conference. Isolation techniques actice, oxygen therapy.
uisite: PNE 1008.

)12 Advanced Medical-Surgical Nursing III 7 0 0 8

inue the study of the nursing needs of the more seriously ill or aging patients isorders affecting the systems: Gastro-Intestinal, Muscular-Skeletal, Nervous, g eyes, ears, nose and throat, endocrine, urinary and integrementary. Disaster ergency nursing are also included.
isite: PNE 1009.

13 Mental Health 2 0 0 2

troduction of mental, emotional and physical reactions caused by illness and zation. The study of the more frequent symptoms of mental illnesses, and tical Nurse student's role in the care of mentally or emotionally disturbed Common terminology associated with the field of mental health.
site: PSY 1101.

.4 Vocational Adjustment 2 0 0 2

ed to present further nursing ethics, medical-legal aspects of Practical Nursing udy of the organizations for the graduate Practical Nurse, and the study of ities in Practical Nursing and the obligations and responsibilities of the Licensed Nurse as a person, a worker, and a citizen.
ite: PNE 1012.

5 Clinical Experience IV 1* 0 24 9

ed experience in medical-surgical, pediatric and maternity nursing with on the role as an assistant to the professional nurse in caring for the seriously . All experience in the clinical area is under the supervision of the clinical

e: PNE 1011.

PSYCHOLOGY (PSY)

Personality Development 3 0 3

to help the student recognize the importance of the physical, intellectual, emotional dimensions of personality. Emphasis is placed on grooming and personality improvement.

T-PSY 206 Applied Psychology 3 0

A study of the principles of psychology that will be of assistance in the under of inter-personal relations on the job. Motivation, feeling and emotions are co with particular reference to on-the-job problems. Other topics investigated are: e selection, supervision, job satisfaction, and industrial conflicts. Attention is also personal and group dynamics so that the student may learn to apply the prin mental hygiene to his adjustment problems as a worker and a member of the community.
Prerequisite: None.

T-PSY 221 Psychology of Color 3 0

A study of color, the conscious and unconscious response to combinations tones and colors as applied to the field of commercial art.
Prerequisite: None.

PSY 1101 Human Relations 3 0

A study of basic principles of human behavior. The problems of the indiv studied in relation to society, group membership, and relationships within situation.
Prerequisite: None.

PSY 1112 Personality Development 3 0

Designed to help the student recognize the importance of the physical, in social, and emotional dimensions of personality. Emphasis is placed on groo methods of personality improvement.

SOCIAL SCIENCES

T-SSC 201 Social Science 3 0

An integrated course in the social sciences, drawing from the fields of ant psychology, history, and sociology.
Prerequisite: None.

T-SSC 202 Social Science 3 0

A further study of social sciences with emphasis on economics, politic and social problems as they relate to the individual.
Prerequisite: T-SSC 201.

T-SSC 205 American Institutions 3 0

A study of the effect of American social, economic, and political institutio individual as a citizen and as a worker. The course dwells upon cu national, and global problems viewed in the light of our political and econom
Prerequisite: None.

SOCIOLOGY (SOC)

207 Rural Society 3 0 3

ıdy of selected elements of rural sociology with emphasis on current social s. The course provides a sociological background for the understanding of rural hanges. Areas of study include rural culture, group relationships, social classes, ıd suburban communities, farm organizations, the communication of agricultural ogy, rural social problems, agricultural adjustment and population change. isite: None.

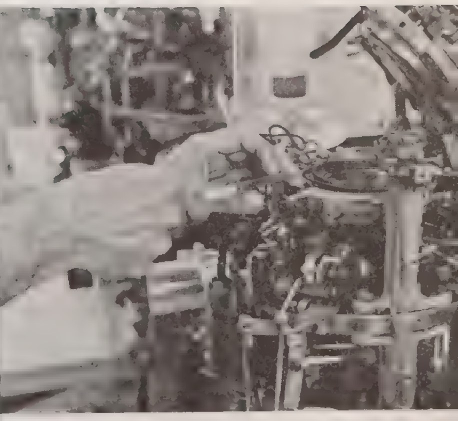
WELDING (WLD)

101 Basic Gas & Electric Welding 0 3 1

ing demonstrations by the instructor and practice by students in the welding fe and correct methods of assembling and operating the welding equipment. will be given for surface welding; brazing, silver-soldering, and flame-cutting applicable to mechanical repair work using gas welding. Practice in basic welding will be given as it applies to simple construction and mechanical

site: None.

GENERAL ADULT EDUCATION



GENERAL ADULT EDUCATION

e Division of General Adult Education provides the adult community a wide range of educational opportunity.

adult of any educational level can choose from the following ories a program to fit his objective.

ADULT BASIC EDUCATION

ic education (grades 1-8) is open to any adult at least 18 years old.

ses meet twice weekly, three hours each night, and are located in s communities throughout Alamance and Caswell Counties. Reading, g, spelling, and arithemtic make up the major areas of study. The t may enter the program at any time, and progress at his own speed. rogram is free of charge.

r finishing the eighth grade level, the student may enter the Adult chool.

ADULT HIGH SCHOOL

operation with the Burlington City Schools, TIA offers a high school to adults who failed to graduate from the public schools. The may transfer completed units from his previous high school. Units ed through regular classroom study. Costs of fees and books are a minimum, usually approximately $5.00 per course.

enrolled a student must be at least 18 years old and his regular ool class must have already graduated. He must have completed the rade in public school or the eighth grade level in the Adult Basic described above.

y enter at the beginning of any quarter, approximately September 1, er 1, March 1, and June 1.

c high school courses are offered from the broad fields of English, tics, social studies, science, foreign languages, and vocational

ates will be issued an Adult High School Diploma from the cooper- lic school board.

who already have a high school diploma may enroll in high school r refresher training.

SELF-IMPROVEMENT AND GENERAL INTEREST COURS

A broad range of courses is offered in this area, including, but not to, the list below. Courses are offered day or night, for short durat order to fit the busy adult's schedule. Variations of course offeri limited only by community interest and available instructors. **Adults call the Institute to express their areas of interest.** Cost of all courses to a minimum and will be announced whenever a course is sch

Academic

- Special Remedial Courses
- College Preparatory Courses
- Advanced Courses

Creative Arts

- Music Theory
- Painting and Drawing
- Art Appreciation
- Art Exhibits
- Speakers Bureau
- Forums on Community Affairs
- Creative Writing

Parent Education

- Adolescent Behavior
- Pre-school Problems
- Child Psychology
- Maternity Care
- Modern Math for Parents

Language Arts

- Literature
- Creative Writing
- Group Dynamics
- Public Speaking
- Rapid Reading
- Effective Listening

Hobby Courses

- Small Engine Repair
- Auto Tume-up at Home
- Orientation to the Auto for Women
- Ham Radio
- Orientation to the Mo
- Volunteer Choir
- Ground School for Pri
  lots

Citizenship

- North Carolina Histor
- American History
- Political Parties
- The Constitution

Family Life

- Mental Hygiene
- Geriatrics
- Community-Family
- Exceptional Children

Homemaking

- Sewing
- Tailoring
- Interior Decorating
- Nutrition
- Landscaping

Foreign Languages

- Conversational Frenc
- Conversational Spani

Consumer Education

- Family Finance
- Law for the Layman
- Consumer Problems
- Personal Investments

EXTENSION

tension courses are job-related part-time studies to increase skills of oyees.

ecial extension areas are state-wide in nature. These courses can be through many of the Community College Systems' institutions through- ie state, each issuing cumulative credits toward extension certificates.

ervice Training

igned for full-time and volunteer firemen including courses such as:

rson
ire Brigade
lvage Operation
otective Equipment
rst Aid and Rescue

Forcible Entry
Extinguisher Practices
Rope Practices
Home Fire Safety
Area Fire Schools

ality Training

gned for the hotel-motel and food service industry including such s as:

aitress Training
usekeeping
nagement
mmunication

Promotion
Service Station Retailing
Food Preparation
School Food Service

nforcement

ned for law enforcement officers including such courses as:

oduction to Police Science
urts and Law
ments of Arrest
rch and Seizure
idence
stigation

Motor Vehicle Law
Liquor Law
Administration
Human and Public Relations
Riot Control
Chemical Tests for Alcohol

ory Development Training

ed for the supervisory or pre-supervisory level including courses in:

iples of Supervision
an Relations
of Motivating People
omics in Business and lustry

Effective Communications
Effective Writing
Effective Speaking
Reading Improvement
Work Measurement

Job Methods
Conference Leadership
Job Instruction Training
Creative Thinking
Industrial Safety and
Accident Prevention
Industrial First Aid
The Supervisor in North Caro
The Supervisor and Employee
Job Analysis Training
Cost Accounting for Supervis

Extension courses are also developed to meet local needs as the Courses are offered day or night, for various durations, to meet the adult's schedule. The following courses represent examples of offerings:

Vocational

Basic Electricity
Air Conditioning
Machine Shop
Auto Mechanics
Drafting
Slide Rule
Blueprint Reading
Loom Fixing
Knitting Machine Fixing
Home Appliance Repair
Weaving
Bricklaying
Farm Electrification
Apprenticeship Training
Power Sewing
Tractor Repair

Technical

Electronics
Computer Operation
Chemistry
Fabric Design
C.O.B.O.L.—Common Business Oriented Language
Precision Measurements

Professional

Review for Licensed Professional Engineers
Refresher for Registered Nurses
Fundamentals of Real Estate
Methods of Teaching Vocational Subjects
Graduate Courses in Education (In cooperation with graduat
Advanced Pharmacology for Licensed Practical Nurses

Other special programs may be offered to meet the training req of a specific business or industry.

Instructors are selected from men who are academically qual who have **demonstrated successful work experience** in the subject taught. Frequent use of case studies, audio-visual aids, and class tion insure a high degree of student interest.

ost is kept to a minimum, frequently only $2.00 per course.

lasses are held both day and night in the modern Technical Institute ding or at the site of employment.

FUNDAMENTALS LEARNING LABORATORY

e Fundamentals Learning Laboratory features programmed, self- ction in areas of the language arts, social studies, mathematics, science, n language, art, and academic skills. Vocational courses are also able in electricity, electronics, and business education.

grammed materials enable the student to **progress at his own speed** o **study during scheduled time periods most convenient to him,** and to without competition with fellow students. Learning Lab hours are A. M. to 9:00 P. M. Monday through Thursday, and 8:00 A. M. to P. M. Fridays.

ny adults study in the Learning Lab in preparation for the State High Equivalency Examination. Some Lab courses are transferable into dult High School Diploma Program. Lab courses frequently meet the of students whose schedules make classroom attendance difficult.

one at least 18 years old can enroll any time during any quarter.

oordinator is available to counsel and assist students. No grades are but students are clearly aware of progress made.

Learning Laboratory study is **free of charge.**

CALENDAR FOR 1969

JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY

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MARCH

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30	31					

APRIL

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JUNE

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AUGUST

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SEPTEMBER

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CALENDAR FOR 1970

JANUARY

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18	19	20	21	22	23	24
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FEBRUARY

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MARCH

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29	30	31				

APRIL

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MAY

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31						

JUNE

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JULY

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30	31					

SEPTEMBER

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OCTOBE

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NOVEMB

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DECEMB

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20	21	22	23
27	28	29	30

TECHNICAL INSTITUTE OF ALAMANCE

411 Camp Road, Burlington, North Carolina 27215

Phone 226-6307

Home Telephone Number ______

1. Name (Mr., Miss, Mrs.) ______ Last ______ First ______ Middle

______ If you are married, give maiden name. ______ If you are under 21, give name of parent

2. Home Address ______ Name and Street ______ City ______ State ______ Zip

3. Marital Status ______ Married, Single, Divorced, etc. If married, give spouse's name and address.

4. Birth ______ Month ______ Day ______ Year ______ Age ______ Birthplace ______ City or County ______ State ______

5. Social Security No. ______ Sex ______ Race ______

6. High School Last Attended ______ Name of School ______ Address of School ______ County

Did you (or will you) graduate?
(a) yes ______ Date of Graduation ______
(b) no ______ Grade Completed ______
(c) Equivalency Certificate ______

7. Schools or colleges attended after high school graduation, if any ______

______ Name of School ______ Dates of Attendance

______ Name of School ______ Dates of Attendance

8. Have you ever been dismissed from a college? No ______ Yes ______ If yes, which college ______

when ______

9. I plan to enroll full time (12 or more quarter hours) ______. Less than full-time ______.

10. I plan to attend Day Classes ______ Evening Classes ______.

11. This application is for admission to what quarter?
Fall 19 ______, Winter 19 ______
Spring 19 ______, Summer 19 ______.

12. I need information on area housing ______.

I understand that I am responsible for having official transcripts of my high school and previous college records, if any, sent directly to the Admission Officer, Technical Institute of Alamance, 411 Camp Road, Burlington, North Carolina 27215. I certify that I have listed above all schools or colleges attended after high school, if any. NOTE: Special physical examination forms are required of Practical Nursing and Dental Assistant applicants. These forms will not be sent to the student until 30 days prior to enrollment.

Date of application ______ Applicant's Signature ______

(over)

speech________ What is your height?________ weight?________.

Do you have any physical handicaps that interfere with your studies or work that you might assume: If so, please explain________________

Are you at present receiving medical care of any sort?________ If so, please describe and give dates.________

____

FIELDS OF STUDY

Please place a check mark before the field of study you wish to pursue. Check only one.

TECHNICAL PROGRAMS

Leading to associate of applied science degree and preparation for employment.

BUSINESS EDUCATION TECHNOLOGIES

- ____Business Administration
- ____Electronic Data Processing—Business
- ____Electronic Date Processing—Scientific
- ____Medical Secretary
- ____Engineering and Technical Secretary

ENGINEERING TECHNOLOGIES

- ____Air Conditioning, Heating, Refrigeration
- ____Chemical Technology
- ____Drafting and Design Technology
- ____Electromechanical Technology
- ____Manufacturing Technology
- ____Electronics Technology

SPECIAL — TECHNOLOGY

- ____Commercial Art and Advertising Design

VOCATIONAL PROGRAMS

Leading to a diploma and preparation for employment.

- ____Air Conditioning, Heating, and Refrigeration
- ____Automotive Mechanics
- ____Dental Assistant
- ____Mechanical Drafting
- ____Machinist Trade
- ____Practical Nursing

EXTENSION CERTIFICATE PROGRAMS

Job related for employed person. (Title see below)

- ____Air Conditioning, Heating and Refrigeration
- ____Automotive Mechanics
- ____Drafting — Mechanical
- ____Radio and TV
- ____Machine Shop
- ____(Other) ________

I am interested in________________

________Undecided. I would like to have assistance through vocational counseling.

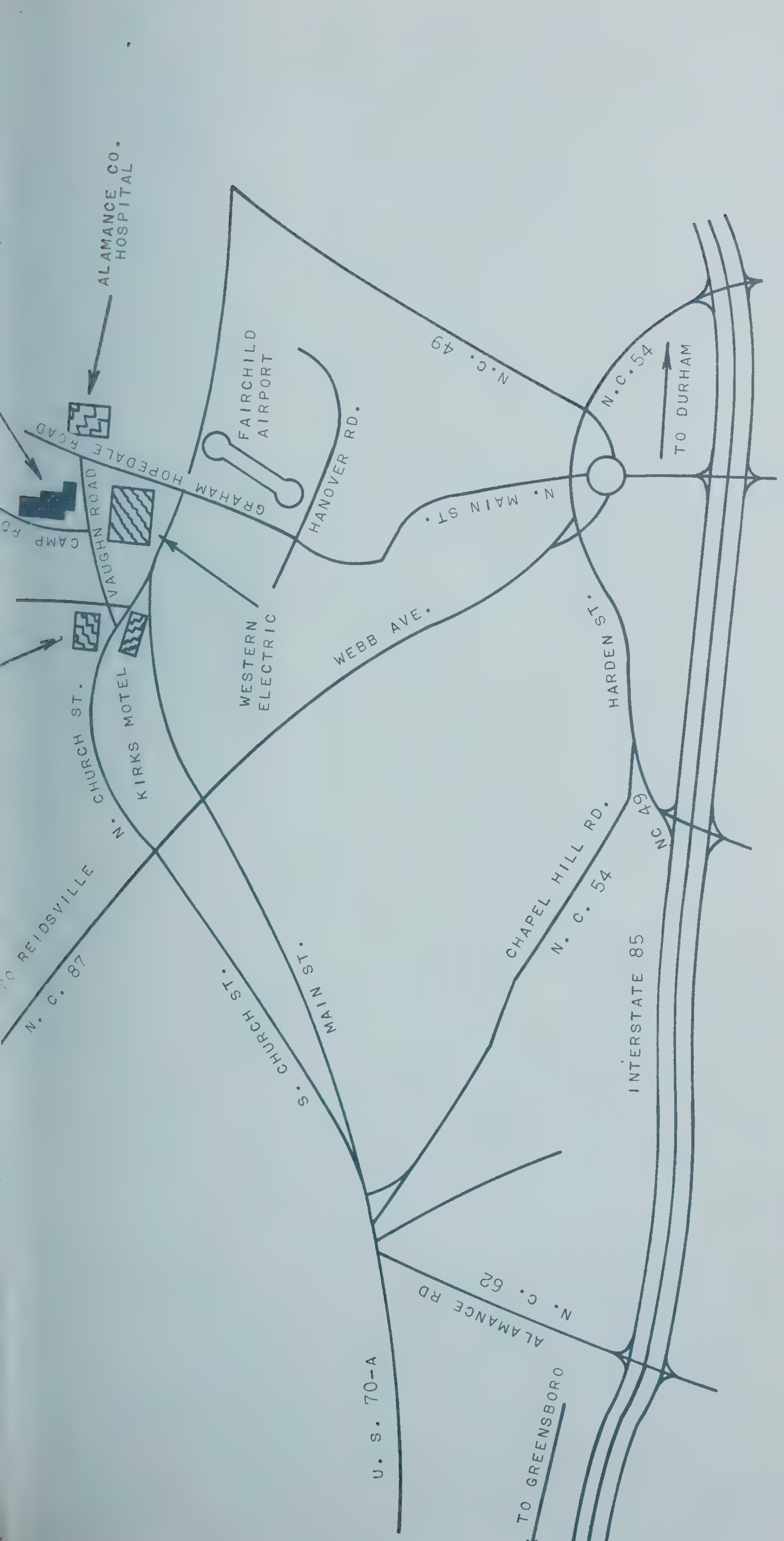
Character References (list three)

On the references below, please list three people who can attest to your character and potential.

Name________________ Address________________

Name________________ Address________________

Name________________ Address________________


ALAMANCE CO. HOSPITAL
CAMP
VAUGHN ROAD
GRAHAM HOPEDALE ROAD
FAIRCHILD AIRPORT
HANOVER RD.
N.C. 49
N.C. 54
TO DURHAM
N. MAIN ST.
WESTERN ELECTRIC
WEBB AVE.
HARDEN ST.
N. CHURCH ST.
KIRKS MOTEL
REIDSVILLE
N. C. 87
S. CHURCH ST.
MAIN ST.
CHAPEL HILL RD.
N. C. 54
NC 49
INTERSTATE 85
N. C. 62
ALAMANCE RD
U. S. 70-A
TO GREENSBORO

TECHNICAL INSTITUTE
of
ALAMANCE

CATALOG 1969-71

TIA
"HE WHO HATH A TRADE -
HATH AN ESTATE"
FRANKLIN

TECHNICAL INSTITUTE OF ALAMANCE
1969-71 SCHOOL CALENDAR

FALL QUARTER

Registration	September 8, 1969
Classes Begin	September 9, 1969
Last Day Course May Be Added	September 15, 1969
Last Day Course May Be Dropped Without Penalty	September 30, 1969
Classes End	November 25, 1969
Thanksgiving Holidays	November 27 and 28, 196

WINTER QUARTER

Registration	Dec. 1, 1969
Classes Begin	Dec. 2, 1969
Last Day Classes May Be Added	December 8, 1969
Last Day Classes May Be Dropped Without Penalty	December 23, 1969
Christmas Holidays	December 24-31, 1969 (I
New Year's Holidays	January 1 and 2, 1970
Classes End	February 27, 1970

SPRING QUARTER

Registration	March 4, 1970
Classes Begin	March 5, 1970
Last Day Classes May Be Added	March 11, 1970
Last Day Classes May Be Dropped Without Penalty	March 26, 1970
Easter Holidays	Mar. 27-30, 1970 (Inclus
Classes End	May 26, 1970

SUMMER QUARTER

Registration	June 1, 1970
Classes Begin	June 2, 1970
Last Day Classes May Be Added	June 8, 1970
Last Day Classes May Be Dropped Without Penalty	June 23, 1970
Students' and Instructors' Vacation	July 3-10, 1970 (Inclusi
Classes End	August 26, 1970

CATALOGUE 1969-71

411 CAMP ROAD

TELEPHONE 226-6307

BURLINGTON, NORTH CAROLINA 27215

TA
"HE WHO HATH A TRADE—
HATH AN ESTATE"
FRANKLIN

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Students having questions not answered in this publication m
secure additional information from The Director of Student P
sonnel, Technical Institute of Alamance, 411 Camp Road, Burlin
ton, North Carolina 27215. Telephone 226-63

The Legal and Corporate Name of the Institution is:
"TECHNICAL INSTITUTE OF ALAMANCE"

The provisions of this publication are not to be regarded as an irrevoca
between the student and the Technical Institute of Alamance. The Insti
the right to make changes in the regulations, courses, fees, and othe
policy and procedure as and when deemed necessary. The Institute fur
the right, at any time, to request the student to withdraw when it consider
to be in the best interest of the institution.

CORRESPONDENCE DIRECTORY

cipt handling, please address inquiries as indicated below:

nformation	Office of the President
Matters	Office of the Business Manager
s, Students Information, seling Services	Office of the Director of Student Personnel
l-Technical	Office of the Director of Occupational Programs
rograms	Office of the Director of Evening Programs
ult Education	Office of the Director of General Adult Education

always welcome at the Technical Institute of Alamance. The Administra-
are open Monday through Thursday from 8:00 a.m. to 10:00 p.m. and
n 8:00 a.m. until 5:00 p.m. Visitors desiring interviews with members of
urged to make appointments in advance.

A MAP SHOWING THE LOCATION OF THE SCHOOL
CAN BE FOUND ON THE INSIDE BACK COVER.

BOARD OF TRUSTEES

W. Clary Holt (Chairman)
Partner-Attorney
Sanders and Holt

J. Nimrod Harris (Vice-Chairman)
Secretary-Treasurer
Annedeen Hosiery

Bernie Bean
Assistant Production Manager
White Furniture Co.

Wallace Gee
President-Treasurer
Ewing Motors, Inc.

Hubert Green
Industrial Engineer
Burlington Industries, Inc.

Harry B. Heilig
Manager
Manufacture Engineering
Western Electric Company

J. Robert Holt
Vice-President
The Mebane Company

Mrs. B. Tate Horton
Homemaker

Myron Rhyne
Executive Vice-President
Travora Textiles, Inc.

Dr. Carl Sellars
Veterinarian
Sellars Animal Hospital

Elijah Shaw
Welder Operator
Western Electric Co.

D. J. Walker, Jr.
Partner-Attorney
Walker, Harris, and Pierc

ADMINISTRATIVE OFFICERS

m E. Taylor	President
L. Barnes	Administrative Assistant
on Cherry	Business Manager
. Davis	Extension Director for Adult Basic Education
. Easter	Director of Student Personnel
nn Klutz	Registrar
P. Lynch	Director of Learning Resources Center
cCarter	Director of General Adult Education
. Turnage	Director of Occupational Programs
Vaughn	Director of Evening Programs

COUNSELORS

a Ray Chacey

Janice Gehres

Richard E. Davis

STAFF

ie Lambert	Bookkeeper
. Miles	Maintenance Supervisor Building and Equipment
th Lougee	Student Concession Supervisor
aldine Nicks	Bookstore Manager

SECRETARIAL STAFF

othy Allred
ne Diffee
Faulkner
Flynt
y Leach

Mrs. Ruth Holloway
Mrs. Peggy Mann
Mrs. Betty Owens
Mrs. Betty Powell
Mrs. Delores Qualls

FULL-TIME INSTRUCTIONAL STAFF

Mrs. Iris Abernathy	Chen
Pedro Alomia	Department Head, Air Conditioning and Refriger
Mrs. Ellen H. Averitt	Secretarial Sci
Mrs. Rebecca M. Baker	Fundamentals Learning Labo
Samuel Bundy, Jr.	Department Head, Business Administ
Vernon M. Cheek	Accou
Gilmer W. Dodson	Department Head, Data Proc
Garvin J. Ducker	Division Chairman, T
Miss Frances Durant	Art and Social Sci
Mrs. Ruth Elzey	Division Chairman, Health Occup
R. Wayne Feamster	Division Chairman, Applie
Robert J. Graham	Learning Laboratory and Related St
Terrance Hanner	Data Proc
Jerry L. Harris	Department Head, Che
Julius A. Kimbro	Data Processing and Mathen
Charles W. Lowry	Division Chairman, Business Techn
Mrs. Mildred B. Lynch	Dental Ass
Mrs. Jess Maghan	Developmental St
Mrs. Jean H. McMillan	Department Head, Secre
Bobby L. Minnis	Division Chairman, Related Su
James C. Newbold	Department Head, Auto Mech
Harry E. Palmer	Commercia
Mrs. Wanda Palmer	Secretarial and Business Administ
Mrs. Florence Pate	Practical N
James E. Peeples	Department Head, Electronics and Radio an
Rudy H. Smith	Department Head, Mathematics and P
John S. Stewart	Department Head, Drafting and Design — Mecha
Ralph Stockard	Electr
James G. C. Swinney, Jr.	Division Chairman, Engineering Techn
Arthur Sykes	Department Head, Machinist, Manufact
William L. Tullar	Social St

GENERAL INFORMATION

ORY

e Technical Institute of Alamance was established in 1959. Its estab- ent was part of a state-wide system known as Industrial Education ers. Through the cooperative efforts of the State Department of Trade Industrial Education and the school systems of Alamance County and ington, the Burlington-Alamance County Industrial Education Center begun.

e need for and the development of the Institute has been centered e principle of responsiveness to changing needs and conditions in the The expansion of the industrial and technological era in the State has ted many new employment opportunities for technically trained per- el. In addition, the right of every individual to have an educational rtunity to develop according to one's potential has been recognized.

e initiation of a state-wide system of Industrial Education Centers begun in 1957 by the allocation of funds by the General Assembly. In , the General Assembly officially designated this type of vocational ol as an Industrial Education Center.

nder legislation enacted in 1963, administration of the Industrial cation Center was transferred to the State Board of Education, De- ment of Community Colleges. The local control of the Institution was ed in a board of trustees by the new legislation.

continuance of the principle of responsiveness to changing needs conditions in the area, the Board of Trustees applied to the State rd of Education through the State Department of Community Colleges ecome a Technical Institute. The State Board of Education approved change in status to a Technical Institute in January, 1964. Along with approval, authority was granted to award the degree, Associate in lied Science Degree (A.A.S.), in approved programs. In the spring of

1964, the Board of Trustees changed the name of the Institute to Te Institute of Alamance.

Future development of the Technical Institute of Alamance will the past, be constantly responsive to the educational and occupati well as culturally oriented needs of the community.

PURPOSE

The purpose of the Technical Institute of Alamance is to meet th cational needs of students and the community alike. In an effort responsive to these many and varied needs, a variety of curric offered. Occupationally oriented curricula are provided for those d training for employment in business and commerce, in health- fields, in skilled trades, and at the technician level in industry. I continual technological advances, it will be necessary to continue o courses that will enable individuals to up-date or to up-grade their

Courses for persons eighteen years old or older who failed to co high school are offered as well as other general adult education c for the social, cultural, and personal development of adults. Educ services—speakers, resource personnel or materials, and special prog will be made available to individuals and organizations as req

The educational, cultural, and social aspects of the individual' development is encouraged through well rounded curricula, ad facilities and equipment, qualified faculty and student activities.

POLICY OF ADMISSIONS

Through following an "open door" policy of admissions at the Tec Institute of Alamance, it is possible for a high school graduate or a leaver 18 years old or older needing formal educational opportunity served by the institution.

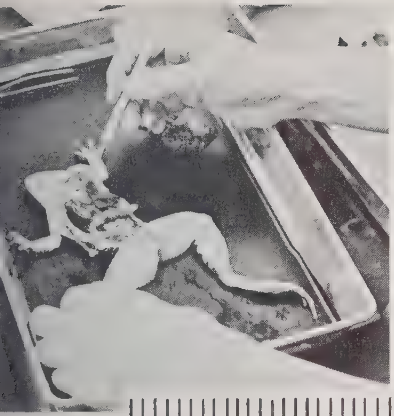
The "open door" policy does not eliminate the restrictions on adm to specific programs. It does mean that these restrictions will be f enough under careful guidance to allow a student every reasonable tunity to prove himself under good teaching. A student will be af the opportunity to eliminate admission requirement deficiencies th remedial work, and may remain in the program of remedial work a as he makes satisfactory progress. As soon as a student can meet the s admission requirements, he may be enrolled in a curriculum. Re specific department for admission requirements for each program.

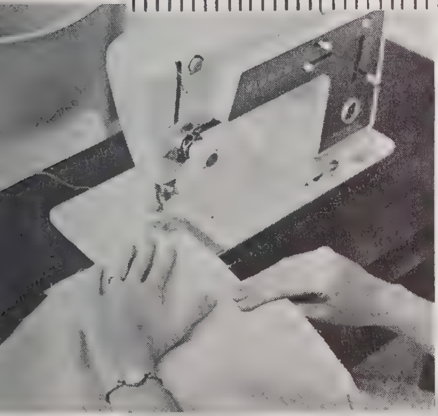
Any person who wishes to take a course or program is asked to plete an application form and return it to the Institute. Upon receipt

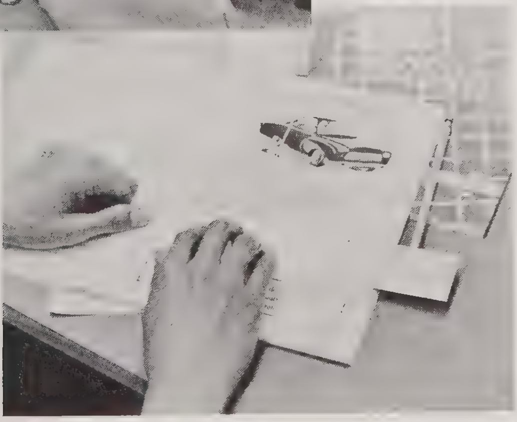
tion, the Student Personnel Office will mail promptly to the pro-
e student instructions regarding admission procedures. Applica-
hould be submitted well in advance of the beginning of the term
ch the student desires to enroll. While students may be processed
day of registration, an early application assures adequate time
processing of the student and enables entry into a program where
nent may be limited. Candidates are encouraged to apply early
assured of a place in class. Classes are closed when maximum en-
nt is reached. A student who plans to pursue a diploma or associate
must ask his high school or college to submit a transcript of all
us work undertaken. Prior to registration, candidates may be re-
d to appear at the Institute for a personal interview and tests.

ACADEMIC INFORMATION

GENERAL ADULT EDUCATION







GENERAL ADULT EDUCATION

The Division of General Adult Education provides the adult comn with a wide range of educational opportunity.

The adult of any educational level can choose from the foll categories a program to fit his objective.

ADULT BASIC EDUCATION

Basic education (grades 1-8) is open to any adult at least 18 year

Classes meet twice weekly, three hours each night, and are locat various communities throughout Alamance and Caswell Counties. Re writing, spelling, and arithemtic make up the major areas of study student may enter the program at any time, and progress at his own s This program is free of charge.

After finishing the eighth grade level, the student may enter the High School.

ADULT HIGH SCHOOL

In cooperation with the Burlington City Schools, TIA offers a high s diploma to adults who failed to graduate from the public schools student may transfer completed units from his previous high school. are earned through regular classroom study. There is no tuition ch however, the cost of books will range from $3 to $5 per course.

To be enrolled a student must be at least 18 years old and his re high school class must have already graduated. He must have complete eighth grade in public school or the eighth grade level in the Adult Program described above.

He may enter at the beginning of any quarter, approximately Septem December 1, March 1, and June 1.

Specific high school courses are offered from the broad fields of En mathematics, social studies, science, foreign languages, and voca training.

Graduates will be issued an Adult High School Diploma from the co ating public school board.

Adults who already have a high school diploma may enroll in high s courses for refresher training.

ELF-IMPROVEMENT AND GENERAL INTEREST COURSES

road range of courses is offered in this area, including, but not limited
e list below. Courses are offered day or night, for short durations, in
to fit the busy adult's schedule. Variations of course offerings are
d only by community interest and available instructors. **Adults should
he Institute to express their areas of interest.** There is no tuition
e for these courses.

emic

- Special Remedial Courses
- College Preparatory Courses
- Advanced Courses

ive Arts

- Music Theory
- Painting and Drawing
- Art Appreciation
- Art Exhibits
- Speakers Bureau
- Forums on Community Affairs
- Creative Writing

nt Education

- Adolescent Behavior
- Pre-school Problems
- Child Psychology
- Maternity Care
- Modern Math for Parents

uage Arts

- Literature
- Creative Writing
- Group Dynamics
- Public Speaking
- Rapid Reading
- Effective Listening

by Courses

- Small Engine Repair
- Auto Tune-up at Home
- Orientation to the Auto for Women
- Ham Radio
- Orientation to the Motorcycle
- Volunteer Choir
- Ground School for Private Pilots

Citizenship

- North Carolina History
- American History
- Political Parties
- The Constitution

Family Life

- Mental Hygiene
- Geriatrics
- Community-Family Relations
- Exceptional Children

Homemaking

- Sewing
- Tailoring
- Interior Decorating
- Nutrition
- Landscaping

Foreign Languages

- Conversational French
- Conversational Spanish

Consumer Education

- Family Finance
- Law for the Layman
- Consumer Problems
- Personal Investments

EXTENSION

Extension courses are job-related part-time studies to increase sl employees.

Special extension areas are state-wide in nature. These courses c taken through many of the Community College Systems' institutions th out the state, each issuing cumulative credits toward extension certif

Fire Service Training

Designed for full-time and volunteer firemen including courses su

Arson
Fire Brigade
Salvage Operation
Protective Equipment
First Aid and Rescue
Forcible Entry
Extinguisher Practices
Rope Practices
Home Fire Safety
Area Fire Schools

Hospitality Training

Designed for the hotel-motel and food service industry includin courses as:

Waitress Training
Housekeeping
Management
Communication
Promotion
Service Station Retailing
Food Preparation
School Food Service

Law Enforcement

Designed for law enforcement officers including such courses as:

Introduction to Police Science
Courts and Law
Elements of Arrest
Search and Seizure
Evidence
Investigation
Motor Vehicle Law
Liquor Law
Administration
Human and Public Relations
Riot Control
Chemical Tests for Alcohol

Supervisory Development Training

Designed for the supervisory or pre-supervisory level including cour

Principles of Supervision
Human Relations
Act of Motivating People
Economics in Business and Industry
Effective Communications
Effective Writing
Effective Speaking
Reading Improvement
Work Measurement

ob Methods
onference Leadership
ob Instruction Training
reative Thinking
ndustrial Safety and
Accident Prevention
Industrial First Aid
The Supervisor in North Carolina
The Supervisor and Employee Benefits
Job Analysis Training
Cost Accounting for Supervisors

ension courses are also developed to meet local needs as they arise. es are offered day or night, for various durations, to meet the working schedule. The following courses represent examples of possible gs:

ional

asic Electricity
ir Conditioning
achine Shop
uto Mechanics
rafting
lide Rule
lueprint Reading
oom Fixing
Knitting Machine Fixing
Home Appliance Repair
Weaving
Bricklaying
Farm Electrification
Apprenticeship Training
Power Sewing
Tractor Repair

nical

lectronics
omputer Operation
hemistry
abric Design
.O.B.O.L.—Common Business Oriented Language
recision Measurements

ssional

eview for Licensed Professional Engineers
efresher for Registered Nurses
undamentals of Real Estate
Methods of Teaching Vocational Subjects
raduate Courses in Education (In cooperation with graduate schools)
dvanced Pharmacology for Licensed Practical Nurses

her special programs may be offered to meet the training requirements pecific business or industry.

tructors are selected from men who are academically qualified and have **demonstrated successful work experience** in the subject area to be t. Frequent use of case studies, audio-visual aids, and class participa- insure a high degree of student interest.

Classes are held both day and night in the modern Technical I
building or at the site of employment.

LEARNING LABORATORY

The Learning Laboratory features programmed, self-instruction i
of the language arts, social studies, mathematics, science, foreign lan
art, and academic skills. Vocational courses are also available in elec
electronics, and business education.

Programmed materials enable the student to **progress at his own**
and **to study during scheduled time periods most convenient to him,**
study without competition with fellow students. Learning Lab ho
8:00 A. M. to 9:00 P. M. Monday through Thursday, and 8:00 A.
4:00 P. M. Fridays.

Many adults study in the Learning Lab in preparation for the Stat
School Equivalency Examination. Some Lab courses are transferab
the Adult High School Diploma Program. Lab courses frequently m
need of students whose schedules make classroom attendance d

Anyone at least 18 years old can enroll any time during any q

A coordinator is available to counsel and assist students. No gra
issued, but students are clearly aware of progress made.

All Learning Laboratory study is **free of charge.**

IRRICULUM
OGRAMS

RAL ADMISSION INFORMATION

ıe Technical Institute of Alamance the "open door" policy provides ce to any individual who feels that he might benefit from training services offered.

nseling services are available to all students, beginning with the ıent interview and continuing throughout the student's enrollment. effort is made to assist students to recognize and to understand ıspirations, educational preparation, interests, motivation and career ves. Assistance is available to help each student recognize his strength eakness in relation to academic programs.

ALLY THE APPLICANT:

Must be eighteen years of age or older (or a high school graduate) to be admitted to the Institute.

Must submit an application form.

Must have high school (and college) transcript of previous academic work or high school equivalency (GED) scores submitted to the Institute.

Should report to the Institute for admission counseling and appropriate testing for which there is no fee. (Appointment schedules for testing will be mailed as application is processed)

Must be in good or acceptable physical and mental health.

ious degree and diploma programs are open to the student entering In addition to the basic standards for admission, specific require- may apply to certain programs. These specific requirements are section of the catalogue giving the program description. Early sub- n of application and meeting placement test schedules will facilitate tance.

SCHEDULE OF CURRICULUM CLASSES

Course Offerings

Shortly before registration each quarter, the Institute will anno master schedule of courses to be offered. This will generally include courses required for a student to complete the work as outlined catalog for his curriculum. In some instances, however, it will be nec for the Institute to rearrange this sequence of course offerings. Every will be made to enable a student to complete his program in the mi possible time. Whenever practical, make-up classes and special c will be offered to those needing them.

Using this master schedule of courses, each student will consul his advisor prior to registration to arrange a class schedule to m own particular requirements.

Class Hours

The Institute will normally offer courses from 8:30 a.m. to 10:0 Monday through Thursday and from 8:30 a.m. to 5:00 p.m. on F Students admitted to a curriculum program may, upon the ap of their department head, register for any of these courses. Those st expressing a preference for either the day or the evening progra expect to have their classes scheduled during these periods:

Day Classes: 8:30 - 9:23 a.m.
9:30 - 10:23 a.m.
10:30 - 11:23 a.m.
11:30 - 12:23 p.m.
12:30 - 1:23 p.m.
1:30 - 2:23 p.m.
2:30 - 3:23 p.m.
3:30 - 4:23 p.m.
4:30 - 5:23 p.m.

Evening Classes: 7:00 - 7:53 p.m.
8:00 - 8:53 p.m.
9:00 - 9:53 p.m.

REGISTRATION PERIODS

The Institute operates on a quarter system. Registration of new st for all curriculum programs occurs at the beginning of the fall qua September and any other quarter when there are sufficient students to a program.

Continuing students may consult the Institute calendar for specific of subsequent registration periods.

NSFER CREDIT

e Technical Institute of Alamance permits admission with advanced ing for transfer students from member institutions of the North lina Department of Community Colleges, and other recognized and oved institutions. Only course grades of “C” or above will be accepted. ent of such courses must closely parallel these for which credit is nt at the Institute.

e Student Personnel Office must approve all transfer credits, prior to l enrollment, and each application for transfer of credit will be eval- l according to the individual situation. Transfer courses will transfer redit only.

ndidates for a diploma or degree are normally expected to complete alf of their course work at this institution. Special cases will be given ideration beyond the aforementioned.

DING AND QUALITY POINT SYSTEM

e Technical Institute of Alamance operates on a quality point system. e computation of a student’s average, one quarter hour of work passed e TIA with a grade of A, B, C, D, or F is given a numerical value of 2, 1, 0 respectively, which is then multiplied by the number of quarter s represented by the course. The resulting product is the number of ity points earned for the course with the grade received.

e quality point average is determined by dividing the total quality its earned in all courses by the total number of quarter credit hours duled including any courses failed.

GRADE		GRADE POINT EQUIVALENT
xcellent	93-100	4 quality points for each credit hour
ood	86-92	3 quality points for each credit hour
air	78-85	2 quality points for each credit hour
assing	70-77	1 quality point for each credit hour
ailure	Below 70	0 quality points for each credit hour

ncomplete. This signifies that the student requires additional time to eet the objectives of the course. Credit may be earned and a perma- ent letter grade recorded when the student has performed additional ork as specified by the instructor. The work and the deadline for its ompletion must be stated in writing by the instructor with a copy going the student, the registrar, and the instructor. The grade of “I” may emain on the student’s record until written notice for a change is given y the instructor (or, in his absence, the Dept. Head) to the registrar.

WP—Withdrawn Passing. This signifies that the student has witl from a course voluntarily with a passing grade during the through the ninth week of the quarter.

WF—Withdrawn Failing. This signifies that the student has witl from a course with a failing grade during the fourth throu ninth week of the quarter. This designation means that the will not be computed in the quality point average.

W—Withdrawn. This signifies that the student has withdrawn dur first three weeks of the quarter.

F—Failure. This signifies that the student withdrew from a course failing grade during the tenth through the twelfth week, or fai entire course. Unique cases may be reviewed by the Adminis

AU—Audit. This signifies that the student has taken a course for no

All final course grades will be a letter grade in accordance w adopted grading system. Students will receive reports at the end quarter.

GRADUATION REQUIREMENTS

Requirements for the degree or diploma will vary according to c lum. The student should refer to the catalog or brochure which ap his program so that he can determine the course requirements for tion. All students must have a grade point average of 2.0 (C average eligible for graduation.

STUDENT'S RESPONSIBILITY FOR SECURING SPECIAL

It is the student's responsibility to seek out extra help if needed. Inst are available for conferences but will not require that a person co for extra help. In all cases, an instructor will be more than willing t but it is up to the individual student to ask.

WITHDRAWING FROM SCHOOL

If a student wishes to withdraw for any reason, he should:

1. Discuss it with his advisor
2. Report his decision to the Student Personnel Office
3. Obtain a clearance form that will be signed by each subject inst including the librarian and the general office.

The failure to do this may result in the withholding of all informa the student's file by the Director of Student Personnel.

ITIONAL COURSE WORK

contact hours for each curriculum are minimal. It is a policy of nstitution to permit students to enroll in additional courses and/or atory work beyond those shown in the catalog.

ıen in any quarter the total weekly contact hours listed are fewer than y-five hours in a technical curriculum and fewer than thirty hours in a ional trade curriculum, a student may enroll on request for additional ıctional hours deemed by the institution to be consistent with the am and appropriate to the student to make up twenty-five hours veek in a technical curriculum or sufficient hours of attendance to up thirty hours per week in a vocational trade curriculum.

IAL STUDENTS

cial students are those who are enrolled for course credit but not curriculum leading to the diploma or the associate degree. Students led in this status will normally be required to meet the prerequisites ıe course or to demonstrate a necessary level of competence by an priate test. Students enrolled on this basis must do so through gement with the Student Personnel Office.

ISIONAL STATUS STUDENTS

dents who have not completed placement tests or lack sufficient data eir file may be classified as provisional students. Those students on this must complete all admission requirements following actual enrollment.

IT STUDENTS

tudent may elect to audit a course or courses. Those auditing receive edit and do not have to take any examination; otherwise, participation ıss is on the same basis as a credit student. The fee for auditing is the as the fee for credit.

RSE LOAD

dents enrolled for 12 or more credit hours are classified as full time nts. Those taking less are classified as part time. Normal course load vary from one curriculum to another and should be carefully planned the Faculty Advisor. A student may enroll for maximum load depend-pon his capability as determined by his Faculty Advisor. A normal e load is outlined by Departments in this catalogue.

APPLICATION FOR DEGREE OR DIPLOMA

Students are required to apply as candidates for the diploma degree. This must be completed during the first two weeks of th quarter of school attendance. This insures that the candidate's will be properly reviewed, and that he will be notified of any defici

STUDENT DEFERMENT

The Selective Service makes provisions for those students who me tain requirements to be deferred. The first requirement is enrollm a full time curriculum program (minimum 12 credit hours), an second one is satisfactory progress in the program.

CLASS ATTENDANCE AND REGULATIONS

Regularity of class attendance is expected of all students. With ea sence a student incurs the loss of some educational value.

The following rules governing class absences will be strictly and enforced:

1. A student will not be penalized if absences do not exce number equal to the credit hours of the course. Days before a lowing legal holidays and vacation constitute two absen each credit hour missed.

2. Each student is urged to use these absences *only* for the foll reasons:
   - (a) Illness of the student.
   - (b) Death of a member of the immediate family (Pa siblings, grandparents).

   When a student exceeds the allowed number of absences course, *he may be dropped by the instructor and the registr be notified.*

3. When an absence occurs on a day of a test, permission to a make-up test will be granted at the discretion of the inst Students are responsible for arrangements of make-up tests one week following an absence.

4. Students are responsible for obtaining all assignments and covered during an absence.

5. A student should report illness in excess of one day to the S Personnel Office.

. Three tardies are counted as one absence. The first ten minutes of class constitutes a tardy; time thereafter is considered an absence.

. Cases involving unusual circumstances may be reviewed by the student affairs committee. *(Written request must be initiated by the student to the chairman of this committee).*

. In cases when the instructor is not in class and other arrangements have not been made, the students are automatically dismissed after ten minutes. A roll must be signed by the students present and turned in by one of them to the General Office.

)EMIC PROBATION

tudent must achieve a cumulative quality point average of at least order to graduate. Failure to achieve a 2.0 quality point average (QPA) end of any quarter (for that quarter) will result in the student placed on academic probation. The student will be notified of his tionary status by letter and *will be required* to schedule periodic ences with a counselor or advisor.

udent on probation may remain in his program as long as his subse- quarter's QPA meets the minimum of 1.50. If the subsequent r's work should fail to meet this minimum, the student may be re- l by his Department Head to drop certain courses or change curri- , and/or take remedial work. A student will be dismissed from the l only if it is evident that he is unable to maintain progress after all le alternatives are exhausted.

admittance at a subsequent quarter will be at the discretion of the nt Affairs Committee. Students may appeal a decision of the De- ient Head by letter to the Student Affairs Committee. Decisions e Student Affairs Committee may be appealed by letter to the l of Trustees via the President of the Institute.

)ENT CONDUCT

dents will be expected to conduct themselves at all times as indi- ls of prudence and maturity. The rights and feelings of others will spected. Students shall demonstrate a high regard for school facilities property and for the personal property of others.

ool regulations which serve to control such activities as vehicular and parking, smoking, and other aspects of personal conduct must served. Students may be suspended or dismissed for conduct which nsidered incompatible with standards of propriety and good judg- .

Re-admittance of dismissed students at a subsequent session w at the discretion of the President. Students may appeal a suspensi dismissal decision by letter to the Board of Trustees via the President

PRESIDENT'S LIST AND DEAN'S LIST

In order to honor outstanding students, the President's List ar Dean's List is published after each quarter. To qualify for the Dean' a student must take a minimum course load of 12 quarter credit hou maintain a 3.3 quarter point average with no grades lower than a "(qualify for the President's List, a student must take a minimum cours of 12 quarter credit hours and maintain a 3.8 quarter point averag no grades lower than "C".

HONORS AT GRADUATION

Graduating students who earn a Quality Point Average of 3.3 duri course of study will receive a degree or diploma with honors. Those e a Quality Point Average of 3.8 will receive a degree or diploma witl honors.

COURSE NUMBERING SYSTEM

The following system established by the Department of Comn Colleges is used in designating the courses offered by the Ins

1. Each course is indicated by a three-letter prefix designatir general subject area. The prefix for technical courses will b ceded by the letter "T".
2. A number follows the letter prefix to indicate a specific within an area according to the following rules:

   Vocational courses are assigned numbers within the ran 1000 to 2000.

   Technical courses are assigned numbers within the ran 100 to 300.

   Adult Education courses beyond the high school leve assigned numbers within the range of 2000 to 3000.

   Special courses developed by the Institute for curriculum grams will be indicated by the letter "S" following an a priate prefix and number chosen according to the above

ollowing is a List of the Abbreviations Used as Prefixes:

r Conditioning, Heating & Refrigeration	AHR
t	ART
ıtomotive	AUT
ısiness	BUS
ıemistry	CHM
ɔmmercial Art	CAT
ental	DEN
esign	DES
rafting and Design	DFT
conomics	ECO
ectrical	ELC
ectronic Data Processing	EDP
Electronics	ELN
English	ENG
Industrial Science	ISC
Mathematics	MAT
Mechanical	MEC
Nursing	NUR
Philosophy	PHI
Physics	PHY
Power Mechanics	PME
Political Science	POL
Psychology	PSY
Sociology	SOC
Social Science	SSC
Welding	WLD

PENSES ND FEES

RAL INFORMATION

eeping with its philosophy, the Technical Institute of Alamance o provide quality education and training at the lowest cost possible. state and federal governments provide funds for equipment and s.

local board of county commissioners provides funds to acquire rect buildings, and to maintain and operate the buildings.

distribution of operating costs are shared approximately as follows:

State	79%
Local	8%
Student	13%

thirteen percent of cost assumed by the student is through the nt of tuition and fees.

–TIME DUE AND DEFERRED PAYMENT

ion and activity fees, if applicable, are due and payable at the time student's registration; however, in hardship cases a short-term de- payment or payment in installments may be made. Requests for de- payment or payment in installments must first be approved by the it Personnel Service office and then repayment schedules shall be set Business Office; provided, however, that no student shall be permit- graduate or to register for a new quarter if he has an unpaid balance account from any previous quarter unless payment of such outstand- lance has been guaranteed in writing by a financially responsible or organization.

checks and money orders should be made payable to Technical ite of Alamance. A check given in payment of expenses which is returned by the bank creates an indebtedness to the Institute and jeop the student's enrollment.

A student will not be allowed to graduate, receive a diploma o ficate, or a transcript of his record, nor will any information con his record be forwarded to any other institution or other person as an account is outstanding.

The student should arrange well in advance to pay all necess penses on the day of registration.

TUITION—NORTH CAROLINA RESIDENT

The formula for equating credit-hour equivalency with credit h the purpose of assessing tuition charges is as follows:

1 class hour = 1 credit hour
2 laboratory hours = 1 credit hour
3 shop hours = 1 credit hour

Credit Hour Equivalency X $2.50 = tuition per quarter with a maxi $32.00 for technical and vocational curriculum students.

FULL-TIME STUDENTS

All vocational, technical, special, and audit students who are e for thirteen (13) or more credit hours are charged a maximum of per quarter; however, students enrolled for 12 credit hours or m full-time students.

PART-TIME STUDENTS

The tuition charge for curriculum credit students (and audit st is $2.50 times the number of credit hours for which the student is e Example: 9 credit hours X $2.50 = $22.50.

ESTABLISHMENT OF RESIDENCY

A student who is not a legal resident of North Carolina must p resident tuition. A person twenty-one years of age or older is not eligible for the resident rate of tuition unless he has establish maintained his legal residence in North Carolina for at least six immediately preceding the date of his first enrollment in the Te Institute of Alamance. The legal residence of a person under twe years of age at the time of his first enrollment in the Technical Inst nce is that of his parents, surviving parent, or legal guardian. If rents are divorced or legally separated, the legal residence of the will be considered the residence of the student unless custody of nor has been awarded by court to the mother or to a legal guardian han a parent. No claim of residence in North Carolina based upon sidence of a guardian will be considered if either parent is still unless the action of the court appointing the guardian precedes the t's first enrollment at the Technical Institute of Alamance by at least months.

n the resident status of a student is determined at the time of his rollment, it may not thereafter be changed except (a) in the case on-resident minor student whose parents subsequently establish esidence in North Carolina; and (b) in the case of a resident student, parents, who cease to be residents of North Carolina.

legal residence of a wife follows that of her husband except that an student enrolled in the Institute as a resident may continue as ent, even though she marries a non-resident.

does not acquire the status of a resident of North Carolina by reason g stationed in the State while in military service.

ership of property, payment of state or local taxes, or registration utomobile in the state, apart from legal residence, will not qualify r the resident rate of tuition.

lents who are in doubt as to their status as a resident should request ation by writing to or consulting the Business Manager before ation.

)F-STATE TUITION (Non-Resident)

student whose legal residence is outside of North Carolina will ition fees two and one-half times the in-state resident rate. Students with relatives in this state whose parents or guardian live outside Carolina will pay tuition fees two and one-half times the in-state t rate.

-TIME NON-RESIDENT

-resident students taking thirteen (13) or more credit hours of work charged a maximum of $80.00 per quarter tuition for vocational and cal curriculum programs.

-TIME NON-RESIDENT

se taking twelve (12) or less credit hours of work per quarter will be d $6.25 times the number of credit hours enrolled.

Audit and Special Students, who are non-residents, will be cha the same rate as the non-resident curriculum student.

ACTIVITY FEE

An Activity Fee of $1.00 per quarter is required of all cur students enrolled for twelve (12) or more credit hours. The fee is at the beginning of each quarter and is payable by both resident a resident students. These fees are to be used at the discretion of the Council for such purposes as a school newspaper, dances, picni This fee is not refundable.

CURRICULUM PROGRAM LATE REGISTRATION FEE

To prevent or reduce the problems incident to late registration, r tion schedules are set for specific days and certain definite procedu required.

A student has not completed registration until all of the r steps are taken. It is the student's responsibility to seek and then to the necessary procedures.

Any student who fails to complete registration for all classes make the required payment of expenses and fees on the pre registration day according to the official school calendar will be a late registration fee of $5.00. This applies to all curriculum s with no exception—day, evening, full-time, part-time, special, an enrollees.

Those with anticipated financial difficulties should contact the pe office, in person, well in advance of the registration deadline.

REFUND POLICIES

Cash Refund

Tuition refund for students shall not be made unless the stu in the judgment of the institution, compelled to withdraw for unav reasons. In such cases, two-thirds (2/3) of the student's tuition ma funded if the student withdraws within ten (10) calendar days a first day of classes as published in the school calendar, provided dent completes the "Request for Refund" form within thirty (30) d officially withdrawing from school. Tuition refunds will not be co after that time. Tuition refunds will not be considered for tuitions Dollars ($5.00) or less, unless a course or curriculum fails to ma due to no fault of the student. EXCEPTION: Those students veterans or war orphans receiving benefits under U. S. Code, Chapter 33 and 35 may be refunded the *pro rata* portion of the fee not used at the time of withdrawal of such students.

re is no refund on payments for activity fees, insurance premium nd special fees such as late registration.

ll refund cases, the student must initiate his withdrawal through dent Personnel Office. The Business Office will make the allowable only after written request has been received from the Personnel with approval by the Director of Student Personnel and the t's Department Head.

IT FOR UNREFUNDED TUITION AND FEES

re a student, having paid the required tuition and fees for a quarter, aws from the institution before the end of the quarter and the reasr the withdrawal are found excusable, the student may be allowed for unrefunded tuition and fees if he applies for re-admission during the next four calendar quarters and petitions in writing to be allowed redit.

S AND SUPPLIES

of the student's necessary textbooks can be acquired from the Insti- bookstore. Drawing supplies, slide rules, nursing caps, nurses and assistant pins are also available in the bookstore; however, composioks, pens, pencils, decals and other miscellaneous items are sold snack bar in the student lounge.

bookstore is operated on a strictly cash basis and there is no ren books or supplies. It would be to the student's advantage to meet lass at least once before attempting to purchase texts and materials. e textbooks cost as little as $1.25 and others as much as $15.00, e average cost of each book is approximately $8.00. Most students l anticipate spending an average of approximately $40.00 per quarter oks, supplies, and materials. The total cost varies according to the ular program. The nursing, drafting and commercial art programs e special items and/or instructional kits which may vary from r to quarter.

ORM DEPOSIT (Nursing Students Only)

sing students are required to make a $20.00 uniform deposit payable General Office during the first quarter.

uniform deposit entitles each nursing student to the use of three s of uniforms and two (2) caps. (Caps are sold in the Institute's book- to licensed practical nurses who have graduated from the Technical ute of Alamance.)

uld the student complete the requirements for graduation and re- ll uniforms in satisfactory condition, the $20.00 may at the request of the student, be paid to the State Nursing Board to cover the re cost of taking the examination which enables practical nurses to b licensed. This deposit is refundable to those who leave school and ret uniforms in satisfactory condition.

INSURANCE

Accident insurance, covering hours in school and transportation t from school, is available for $3.00 per year. Students desiring this ins may make payment to the General Office after registering for th Quarter and at other designated times. It is not refundable.

Neither the Institute nor the State of North Carolina carries ins to cover any student for accidents or otherwise. Therefore, studen rolled in all shops and labs are particularly urged to take advant this insurance.

TYPICAL FALL QUARTER EXPENSES

	N. C. Resident	Non-Res
Tuition	$32.00	$ 80
Activity Fee	1.00	1
Insurance (Optional)	3.00	3
Books and Supplies (Estimate)	40.00	40
TOTAL	$76.00	$124

TYPICAL SPRING QUARTER EXPENSES

	N. C. Resident	Non-Resi
Tuition	$32.00	$ 80
Activity Fee	1.00	1
Books and Supplies	40.00	40
TOTAL	$73.00	$121

Students in the curriculums or programs listed below will have tional expenses as indicated:

Practical Nursing—$20.00 (Uniform Deposit)—1st Quarter
Commercial Art—$50.00 (Drafting Kit & Supplies)
Drafting—$30.00 (Drafting Kit & Supplies)

TRANSCRIPT FEE

The first transcript is free. After the initial transcript is issued, a $1. will be charged for each subsequent transcript.

UDENT RVICES

RAL PHILOSOPHY

ent services are an integral part of the educational program of the ical Institute of Alamance.

main purpose of these services, individually and collectively, is litate the educational process of the student. In support of this ie student services are organized to assist students in moving from vel of achievement to another.

ent services include various forms of assistance through counseling, , orientation, and placement. Various student affairs, such as financial rt-time work, the supervision of extra-curricular activities and stu- ouncil are also included within the framework of these services. sis by counselors is placed on self-understanding, personal growth sistance in achieving economic self-sufficiency in a job reasonably riate to abilities and satisfying to individual interests.

philosophy of Student services is based on these purposes in a y atmosphere so that personal integrity and group morale will be ved and enhanced.

SELING AND TESTING SERVICE

gnizing that every person is an individual and unique in aptitudes, ality, and ambition, a counseling service is provided for students esire assistance with vocational, educational, and related matters. luals of the community are invited to seek this service if they de- obtain assistance in the attainment of personal goals. Testing is ed at no cost to the student when information is desired and needed tude, temperament, achievement, and vocational interest. Individuals couraged to avail themselves to these services.

PLACEMENT SERVICE

Employment opportunities are made available as another serv the institution. Prospective employers visit the campus to recruit institution. Students are assisted in making contacts with future emp Information is available regarding trends of employment, data salaries, and a file kept up-to-date on prospective employers and e ment.

The Student Personnel Office, however, does not guarantee emplo The objective of this service is to guide and assist the student in obt the type of position for which he has been best qualified.

STUDENT HOUSING

The Institute does not have dormitory facilities and does not assu sponsibility for housing. However, Burlington residents do voluntaril housing facilities. Costs will vary between $8 to $16 per week accor livability and convenience. Students are urged to make early pla housing and investigate before enrollment date.

FACULTY ADVISOR SYSTEM

The advisor system is a cooperative effort of the advisor and the S Personnel Office.

At the time of enrollment, each student is assigned a faculty a The purpose of the advisor is to assist students in planning their pro and selecting courses so that appropriate progress will be realized. student is expected to be fully responsible and cognizant of his sta his program in relation to standards of the institution.

FINANCIAL AID SERVICE

Assistance is made available to students in meeting their fir needs for school attendance. Where possible, this is done through a pr of financial aid which may include several forms of assistance.

The Institute serves as a referral and information agency for the foll resources:

A. Veterans Benefits
B. Social Security Agency
C. Department of Public Welfare
D. Employment

e Institute serves students directly as a disbursing agency for the
wing:

A. Scholarships
    1. Nursing Student Scholarships
B. Work Study Programs
C. Loans
    1. College Foundations
        A. Insured Loan Program
        B. Bryan Foundation
        C. Picket and Hatcher Foundation

udents must be accepted before application is made for financial aid.
financial aid program is generally based on need and scholarship.
ications for financial aid may be obtained from the Student Personnel
ces Office. Since there is time involved in processing of an application,
nced planning must be made.

ENTATION FOR FRESHMEN AND TRANSFER STUDENTS

he purpose of the orientation program is to introduce the student to
administrative personnel, faculty, and student leaders. The rules, poli-
and privileges of the Institute are discussed as contained in the Stu-
Handbook. All new freshmen and transfer students are required to
d the sessions as scheduled.

ERANS EDUCATION BENEFITS

he Technical Institute of Alamance is approved by the Veterans
ministration for students who are eligible under the law. Eligible
ons for benefits are urged to take advantage of the guidance service
educational facilities of the Institute. Veterans and dependents or
ents who expect to enroll under the War Orphans Educational Assistance
should contact their Veterans Service Office in advance of registration.

or veterans enrolled under the G. I. Bill, in order to receive full
efits, are required to carry a full load of class work. The contact hours
wn in the catalogue are minimal. It is a policy of this Institute to per-
students to enroll in additional subjects and laboratory work beyond
e shown in the catalogue in order to broaden their training.

STUDENT LOUNGE

The Student Lounge is located centrally in the building and is to all students as a place for relaxation and refreshments. A varie soft drinks, along with coffee, candy, and sandwiches are availab the snack bar.

ARNING SOURCES

rning to appreciate and use the library is an important part of every dual's education. The Technical Institute of Alamance recognizes this ignificant factor in all of its programs. Every effort has been made to y the best possible resource material and a competent staff to meet needs for the student, the faculty, and the community.

collection of books and materials is open-shelf and open-stack. This access to books fosters an informal working atmosphere which enges the student to read and study. Students, who are urged to take ive in reading and research, find an environment where they see that ledge is not confined to disciplines or compartments but continues one field to the next. In this situation, students usually learn more ly when they can turn readily from the examination of one book to xamination of others related to their immediate interest. The book tion of about 12,500 volumes is growing at the rate of 2,000 yearly.

subscribes to approximately over 150 well-chosen periodicals which sent and support the curriculum. Those which are indexed in Reader's and the Applied Science and Technology Index, are bound each for permanent use. These periodicals are useful in locating the most t information on a particular subject.

Learning Resource Center, through film rental agencies, supplies or classroom use. Film use provides another dimension to the individ l's learning. The student has access to a select collection of super 8mm oops, which may be viewed at his convenience to reinforce the con- learned in the classroom. The student may have access to 8mm ctors on request.

order that the student make full use of the total resources of TIA, an tation film on Library use is provided with the class instructor serving person best qualified to introduce the student to the literature of his cular field. Students are urged to ask for help when they feel the need of

PROGRAMS OF STUDY

The Technical Institute of Alamance offers the following progra study:

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

Applied Arts

- Commercial Art and Advertising Design
- Technical Illustration

Business Technologies

- Business Administration
- Business Data Processing
- General Office Technology
- Medical Secretary
- Scientific Data Processing
- Technical Secretary

Engineering Technologies

- Air Conditioning and Refrigeration
- Chemical Technology
- Drafting and Design Technology
- Electronics

DIPLOMA PROGRAMS

Health Occupations

- Dental Assisting
- Practical Nursing

Mechanical Occupations

- Air Conditioning and Refrigeration Mechanics
- Automotive Mechanics
- Machinist Trade
- Mechanical Drafting

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

A PROCESSING SYSTEM

ASSOCIATE DEGREE PROGRAMS

(TWO YEARS)

ADMISSION REQUIREMENTS

MUM ADMISSION REQUIREMENTS

rements for admission of a candidate to the two-year associate degree ms include the following qualifications. The candidate:

Must be a high school graduate or have a State-approved equivalent education.

Must submit the transcripts of high school and post-high school education.

Must demonstrate aptitude for desired training as determined by standard tests.

. Must be in acceptable condition of physical and mental health. Medical examination may be required at the discretion of the administration.

. May be required to have an interview with a designated representative for discussing enrollment plans and lifetime career goals.

dition to the above minimum admission requirements, more specific quisites are necessary in some programs.

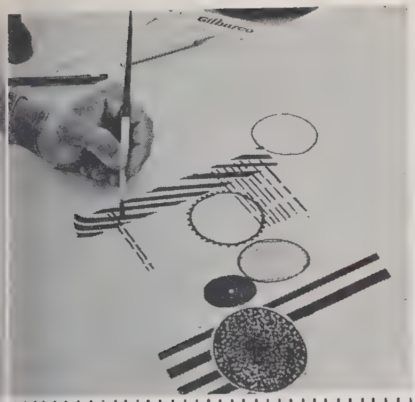
nits of Algebra or one unit of Algebra and one unit of Plane Geometry quired in the following programs:

ir Conditioning and Refrigeration Technology
usiness Data Processing
hemical Technology
rafting & Design Technology
lectronics Technology
cientific Data Processing

uggested that students should have completed one unit of physical e with laboratory.

ities are available at the Institute for removal of academic deficiencies.

APPLIED ARTS



COMMERCIAL ART AND ADVERTISING DESIGN

e of Curriculum

eys have shown an increase in the demand for graduates possessing
g in the field of Commercial Art and Advertising Design. This cur-
m will prepare a graduate with a sound, well-rounded background for
cal and creative achievement throughout his professional life. Design
ustration for commerce is continually advancing its standards, there-
e background offered the student must be well-developed to prepare
r performance on a contemporary professional level. Graduates of this
m will have an adequate background in illustration, layout and letter-
esign, and production enabling them to be employed in some facet of
nercial Artistry.

uipped with professional competence and the potential for continuing
n and improvement, graduates are qualified for employment in ad-
ing agencies, design studios, department stores, industrial advertising
tments, government agencies, newspapers, television studios, printing
ublishing houses.

escription

commercial artist or advertising designer creates and designs layouts
llustrations for printing, creates posters, signboards, billboards, and
cards. He may design and prepare charts, diagrams, sketches, and
for publication and exhibition, perform responsible illustrative work
ckage design, photography, lettering, and art work for the printing
sses. Opportunities for graduates of this program may be in advertising
ies, newspapers and magazines, television studios, industrial advertis-
epartments and design studios, department stores, government agencies,
printing and publishing houses.

Minimum Admission Requirements

Requirements for admission of a candidate to the two-year asso gree in the Commercial Art program includes the following quali The candidate must:

1. Be a high school graduate or have a State-approved equiva cation.
2. Submit the transcripts of high and post-high school educa
3. Demonstrate aptitude for desired training as determined ard tests. These tests will aid in student selection, placem guidance. Institution guidance and counseling will be ava the student throughout his education, not just at the time rollment.
4. Be in acceptable condition of physical and mental health. examination may be required at the discretion of the admini
5. Have an interview with a designated representative for di enrollment plans and lifetime career goals.
6. Draw the following on appropriate 8½" by 11" paper. Do oil paint, illustration board, mats, or frames of any kind. ink, tempera, wash, water colors, conte crayon and pastels fixative) may be used.
   - A. A picture representing "An Exciting Event in My Li
   - B. A self portrait.
   - C. One of the following:
     1. Design a travel poster and give the informatio you consider relevant.
     2. Design and render in perspective a product suc automobile, home appliance, or telephone.

It is suggested that students should have completed one unit of science with laboratory.

Facilities are available at the Institute for removal of ac deficiencies.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

	C
T-ENG 101 Grammar	
T-DFT 101 Technical Drafting	
T-CAT 101 Advertising Principles	
T-CAT 105 Life Study	
T-CAT 121 Commercial Art and Advertising Design	
	1

Quarter	C	L	CH
102 Composition	3	0	3
102 Technical Drafting	2	4	3
110 Business Mathematics	5	0	5
106 Life Study	0	6	2
122 Commercial Art and rtising Design	3	6	5
	13	16	18

Quarter	C	L	CH
103 Report Writing	3	0	3
116 Photography	2	6°	4
123 Commercial Art and ertising Design	3	9°	6
106S History of Art I	4	0	4
	12	15	17

Quarter	C	L	CH
204 Oral Communications	3	0	3
205 Advertising Copywriting	3	0	3
212 Advertising Illustration	1	3	2
224 Commercial Art and ertising Design	3	9	6
107S History of Art II	4	0	4
	14	12	18

uarter	C	L	CH
Science Elective	3	0	3
213 Advertising Illustration	1	3°	2
217 Photography	2	6°	4
225 Commercial Art and ertising Design	3	6	5
re	4	0	4
	13	15	18

pulative laboratory" involves development of skills and job proficiency. Credit of rter hour for each three hours of laboratory.

s Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr

Sixth Quarter

Social Science Elective
T-CAT 214 Advertising Illustration
T-CAT 226 Commercial Art and
Advertising Design
T-CAT 235 Advertising Art Direction
Elective

Tot

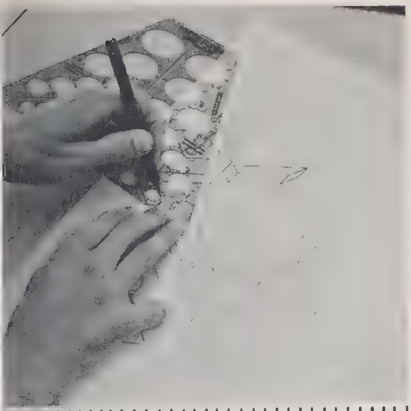
ELECTIVES

Electives for the **Commercial Art & Advertising Design Curriculum** may b
from the following courses. The school will determine which of these are to
in any given quarter of the program.

T-BUS 232 Sales Development
T-CAT 231 Painting with Polymers
T-ENG 206 Business Communication
T-PSY 221 Psychology of Color
T-SSC 201 Social Science
T-SSC 202 Social Science
T-PSY 206 Applied Psychology
T-ECO 102 Economics
T-SSC 205 American Institutions
T-POL 201 United States Government
T-CAT 240 Metal Sculpturing
T-CAT 239 Selective Media

°“Manipulative laboratory” involves development of skills and job proficien
of one quarter hour for each three hours of laboratory.

C = Class Hrs. Per Week   L = Lab Hrs. Per Week   CH = Credit Hrs



TECHNICAL ILLUSTRATION

e of Curriculum

purpose of the illustrator is to provide communication between
ers who design equipment and those who use or service the products.
tions may appear in industrial catalogs, aircraft handbooks, training
ngineering designs and tooling problems, assembly sheets, and pro-
al literature. They are generally drawn by one of the axonometric or
ctive methods and may show part details, cutaway views, exploded
lies, or part installations.

merican industry has grown, technical illustrators have become
mportant in providing illustrations to solve a great number of prob-
n design, manufacturing, assembly, operation, and maintenance of
al equipment. By the use of an illustration which is normally superior
spoken or written word, illustrators can convey the information
ary to give a clear and concise description of a complicated form.
ctorial language is becoming more necessary because of the steadily
ing complexity of the machines of modern living. Technical illustra-
s evolved into an occupation that makes an important contribution
stry and to the strength of the nation.

escription

technical illustrator has the ability to describe the shape, dimensions,
ly, and installation of an object. Information for illustrations is taken
lueprints, technical sheets, engineering sketches, photographs, or
tual parts. The technical illustrator must be able to visualize this
al data in three dimensions, judge what the best methods of presenta-
e, plan his layout, make an accurate drawing, and finish this drawing
ing to the commercial or military specifications to which he is work-

ing. In addition to being technically and artistically correct, the
must also be done within acceptable time limits.

He may lay out and draw schematic, perspective, orthographic
torial views to depict function, relationship, and assembly seq
parts and assemblies, such as gears, mechanisms, and instrum
shades or colors drawings to emphasize details or to eliminate u
background, using ink, crayon, airbrush, and overlays. Pastes ins
and comments in position on drawing. May draw cartoons and ca
to illustrate operations in maintenance, and safety manuals or post

In most illustration departments, a new employee begins with th
jobs and progresses to the most difficult ones as he gains confide
experience.

Minimum Admission Requirements

Requirements for admission of a candidate to the two-year asso
gree in the Technical Illustration program includes the following
cations. The candiate must:

1. Be a high school graduate or have a State-approved eq
education.
2. Submit the transcripts of high and post-high school edu
3. Demonstrate aptitude for desired training as determined b
ard tests. These tests will aid in student selection, placem
guidance. Institution guidance and counseling will be ava
the student throughout his education, not just at the tim
enrollment.
4. Be in acceptable condition of physical and mental health.
examination may be required at the discretion of the admini
5. Have an interview with a designated representative for di
enrollment plans and lifetime career goals.
6. Draw the following on appropriate 8½" by 11" paper. Do
oil paint, illustration board, mats or frames of any kind.
ink, tempera, wash, water colors, conte crayon and pastels
fixative) may be used.
   - A. A picture representing "An Exciting Event in My L
   - B. A self portrait.
   - C. One of the following:
     - (1) Design a travel poster and give the informatio
you consider relevant.
     - (2) Design and render in perspective a product su
automobile, home appliance, or telephone.

It is suggested that students should have completed one unit of
science with laboratory.

Facilities are available at the Institute for removal of acade
ciencies.

TECHNICAL ILLUSTRATION

SUGGESTED CURRICULUM BY QUARTERS

uarter	C	L	CH
101 Grammar	3	0	3
101 Technical Drafting	2	4°	3
101 Advertising Principles	3	0	3
105 Life Study	0	6°	2
121 Commercial Art & Advertising Design	3	6°	5
	11	16	16

Quarter	C	L	CH
102 Composition	3	0	3
102 Technical Drafting	2	4°	3
100 Technical Mathematics	5	0	5
105 Technical Sketching	0	6°	2
122 Commercial Art & Advertising Design	3	6	5
	13	16	18

uarter	C	L	CH
103 Report Writing	3	0	3
115 Art Appreciation	4	0	4
101 Machine Processes	0	6°	2
150 Technical Illustration I	3	9°	6
	10	15	15

Quarter	C	L	CH
204 Oral Communications	3	0	3
204 Descriptive Geometry	2	4	4
116 Photography	2	6°	4
251 Technical Illustration II	3	6°	5
	1	3	2
	11	19	18

uarter	C	L	CH
cience Elective	3	0	3
217 Photography	2	6°	4

ulative laboratory" involves development of skills and job proficiency. Credit
uarter hour for each three hours of laboratory.
ass Hrs. Per Week L = Lab Hrs. Per Week CH = Credit Hrs. Per Qtr.

T-PSY 221 Psychology of Color
T-DES 252 Technical Illustration III
Elective

Sixth Quarter

Social Science Elective
T-DES 256 Seminar Technical Illustration
T-DES 253 Technical Illustration IV
Elective

Tot

ELECTIVES

Electives for the *Technical Illustration Curriculum* may be selected from th
courses. The School may determine which of these are to be offered in any giv
of the program.

TECHNICAL ILLUSTRATION

COURSE TITLE

T-DES 260 Technical Rendering
T-DES 262 Technical Publications
T-ELN 110 Introduction to Electronics
T-DES 280 Special Projects

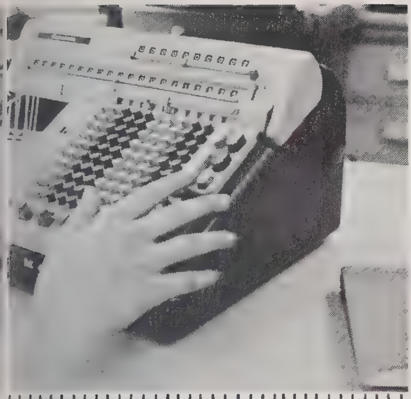
SOCIAL SCIENCE

T-SSC 201 Social Science
T-PSY 206 Applied Psychology
T-ECO 102 Economics
T-SSC 205 American Institutions
T-POL 201 United States Government

°"Manipulative laboratory" involves development of skills and job proficie
of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

BUSINESS
TECHNOLOGY



BUSINESS ADMINISTRATION

e of Curriculum

orth Carolina the opportunities in business are increasing. With the ing population and industrial development in this State, business come more competitive and automated. Better opportunities in s will be filled by students with specialized education beyond the hool level. The Business Administration Curriculum is designed to the student for employment in one of many occupations common to s. Training is aimed at preparing the student in many phases of strative work that might be encountered in the average business. specific objectives of the Business Administration Curriculum are to p the following competencies:.

Understanding of the principles of organization and management in business operations.

Understanding our economy through study and analysis of the role of production and marketing.

Knowledge in specific elements of accounting, finance, and business law.

Understanding and skill in effective communication for business.

Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

escription

graduate of the Business Administration Curriculum may enter a of career opportunities from beginning sales person or office clerk to er trainee. The duties and responsibilities of this graduate vary in nt firms. These encompassments might include: making up and filing , tabulating and posting data in various books, sending out bills, ng calculations, adjusting complaints, operating various office ma- , and assisting managers in supervising. Positions are available in businesses such as advertising; banking; credit; finance; retailing saling; hotel, tourist, and travel industry; insurance; transportat communications.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

T-ENG 101 Grammar
T-BUS 115 Business Law
T-BUS 102 Typewriting I
T-MAT 110 Business Mathematics
T-BUS 101 Introduction to Business

Second Quarter

T-ENG 102 Composition
Business Elective
T-BUS 120 Accounting
T-ECO 102 Economics
T-BUS 116 Business Law

Third Quarter

T-ENG 204 Oral Communication
T-BUS 121 Accounting
T-ECO 104 Economics
T-EDP 103S Concept of Data Processing
T-BUS 110 Office Machines

Fourth Quarter

T-ENG 103 Report Writing
T-BUS 239 Marketing
T-BUS 123 Finance
T-BUS 272 Supervision
Business Elective

Fifth Quarter

T-ENG 206 Business Communication
T-BUS 243 Advertising
T-BUS 235 Business Management
T-BUS 124 Finance
T-Social Science Elective

uarter

	C	L	CH
229 Taxes	3	2	4
271 Office Management	3	0	3
232 Sales	3	0	3
l Science Elective	3	0	3
s Elective	6	0	6
	18	2	19

Total 108

ELECTIVES

tives for the **Business Administration Curriculum** may be selected from the ng courses. The school will determine which of these are to be offered in any quarter of the program.

BUSINESS ADMINISTRATION

	C	L	CH
247 Business Insurance	3	0	3
219 Credit Procedures and Problems	3	0	3
255 Interpreting Accounting Records	3	0	3
233 Personnel Management	3	0	3
245 Retailing	3	0	3
237 Wholesaling	3	0	3
266 Budget and Record Keeping	3	0	3
217 Business Law	3	0	3
300S Current Trends in Business	2	4	4
112 Filing	3	0	3

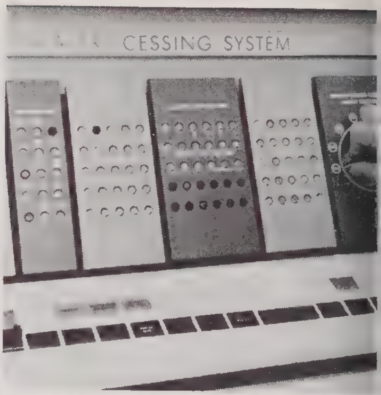
SOCIAL SCIENCE

	C	L	Cr
201 Social Science	3	0	3
202 Social Science	3	0	3
205 American Institutions	3	0	3
L 201 United States Government	3	0	3
206 Applied Psychology	3	0	3

ipulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory.

ass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

BUSINESS DATA PROCESSING



Purpose of Curriculum

The processing of data by electronic equipment has created vast
in business and industry. Nowhere are these changes more apparent
the occupations associated with the handling of business informatio
of the routine and time-consuming work of obtaining, compiling and
ing the information necessary for a business to operate can now be
to machine processing.

This curriculum is designed to give the student (1) an understar
the principles of business operation, (2) experience with techniq
handling business data, and (3) functional competence in the applic
data processing systems, and experience in computer program
business records and accounts, inventory, sales, and income and e
tures essential to business and to management decisions.

Emphasis is upon business data processing and use of machines in
business problems.

Job Description

The business data processing specialist applies currently availa
gramming techniques to a defined problem with minimum supervis
analyzes and defines systems requirements to develop a progr
electronic data processing; conducts detailed analyses of systems
ments, and develops all levels of block diagrams and logical flow
Translates program details into coded instructions; establishes tes
tests, refines, and revises program and documents the procedures. As
if other combinations of instruction would achieve greater flexibility
machine utilization, or more dependable results. He may prepare
plete set of operating instructions for use by a console operator; on o
operates the console in processing program.

SUGGESTED CURRICULUM BY QUARTERS

uarter

	C	L	CH
101 Grammar	3	0	3
101 Technical Mathematics	5	0	5
121 Numbering System and Boolean Algebra	4	0	4
101 Functional Wiring Principles	2	3*	3
104 Introduction to Data Processing Systems	3	2	4
	17	5	19

Quarter

	C	L	CH
102 Composition	3	0	3
102 Technical Mathematics	5	0	5
106 Business Programming	2	4	4
102 Functional Wiring Principles	2	3*	3
120 Accounting	5	2	6
	17	9	21

uarter

	C	L	CH
103 Report Writing	3	0	3
108 Scientific Programming	2	4	4
103 Technical Mathematics	5	0	5
214 Statistics	5	0	5
	15	4	17

Quarter

	C	L	CH
204 Oral Communication	3	0	3
202 Programming System Techniques	3	4	5
21 Accounting	5	2	6
10 Office Machines	2	2	3
	13	8	17

arter

	C	L	CH
ience Elective	3	0	3
205 Linear Programming & al Path Method	4	2	5
25 Cost Accounting	3	2	4
15 Business Law	3	0	3
35 Business Management	3	0	3
	16	4	18

ulative laboratory" involves development of skills and job proficiency. Credit of ter hour for each three hours of laboratory.

Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr

Sixth Quarter

Social Science Elective
T-EDP 216 Research Project
T-BUS 116 Business Law
Elective

Tot

ELECTIVES

Electives for the **Business Data Processing Curriculum** will be selected following courses. The school may determine which of these are to be offer given quarter of the program.

BUSINESS DATA PROCESSING

T-MAT 215S Statistical Programming
T-EDP 219 Systems and Procedures
T-EDP 211 Procedures and Techniques of Automated Design
T-EDP 260 Introduction to System 360

SOCIAL SCIENCE

T-SSC 201 Social Science
T-PSY 206 Applied Psychology
T-ECO 102 Economics
T-SSC 205 American Institutions
T-POL 201 United States Government

GENERAL OFFICE TECHNOLOGY

se of Curriculum

re people are now employed in clerical occupations than in any other
job category. Automation and increased production will mean that
people will need more technical skills and a greater adaptability for
ified types of jobs.

curriculum is designed to develop the necessary variety of skills for
yment in the business world. Specialized training in skill areas is
mented by related courses in mathematics, accounting, business law,
pplied psychology.

escription

graduate of the General Office Technology curriculum may be em-
as an administrative assistant, accounting clerk, assistant office
ger, bookkeeper, file clerk, machine transcriptionist, or a variety of
clerical-related jobs. Positions are available in almost every type of
ss, large or small.

Suggested Curriculum By Quarters

First Quarter	**C**
T-ENG 101 Grammar	
T-BUS 102 Typewriting	
T-MAT 110 Business Mathematics	
T-BUS 101 Introduction to Business	
T-ECO 102 Economics	
	1

Second Quarter	**C**
T-ENG 102 Composition	
T-BUS 103 Typewriting	
T-BUS 212 Machine Transcription	
T-BUS 120 Accounting	
T-BUS 115 Business Law	
	1

Third Quarter	**C**
T-ENG 204 Oral Communication	
T-BUS 104 Typewriting	
T-BUS 116 Business Law	
T-BUS 110 Office Machines	
T-BUS 213 Machine Transcription	
T-BUS 183 Terminology & Vocabulary	
	1

Fourth Quarter	**C**
T-ENG 103 Report Writing	
T-EDP 103S Concepts of Data Processing	
T-BUS 205 Advanced Typewriting	
T-BUS 211 Office Machines	
T-BUS 232 Sales Development	
Business Elective	
	1

Fifth Quarter	**C**
T-ENG 206 Business Communication	
T-BUS 112 Filing	
T-BUS 271 Office Management	
Social Science Elective	
Business Electives	
	1

uarter	C	L	CH
Science Elective	3	0	3
272 Supervision	3	0	3
214 Secretarial Procedures	3	2	4
105S Typewriting Office Practice	2	3	3
s Elective	3	0	3
	—	—	—
	14	5	16
Total			108

ELECTIVES

s for the *General Technology Curriculum* may be selected from the following . The school will determine which of these are to be offered in any given quarter rogram.

TECHNICAL

247 Business Insurance	3	0	3
245 Retailing	3	0	3
217 Business Law	3	0	3
121 Accounting	5	2	6
215 Office Application	6	0	6
112 Personality Development	3	0	3

SOCIAL SCIENCE

201 Social Science	3	0	3
202 Social Science	3	0	3
206 Applied Psychology	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3

MEDICAL SECRETARY

Purpose of Curriculum

The demand for better qualified medical secretaries in our ever-ex medical profession is becoming more acute. The purpose of this cu is to outline a training program that will provide specialized traini accepted procedures required by the medical profession, and to persons to become proficient soon after accepting employment medical and health occupations.

The Medical Secretary Curriculum is designed to offer the stud necessary secretarial skills in typing, dictation, transcription, and ter for employment in the medical profession. The special training in se subjects is supplemented by related courses in mathematics, acc business law, and personality development.

Job Description

The graduate of the Medical Secretary Curriculum should have edge of medical terminology, skill in dictation and accurate transcr medical records, reports and letters. The duties of a medical secret consist of: taking dictation and transcribing letters, memoranda and meeting office callers and screening telephone calls, filing, and sc appointments. The graduate may enter a secretarial position in a v offices such as physicians', private and public hospitals, federal a health programs, and the drug and pharmaceutical industry.

SUGGESTED CURRICULUM BY QUARTERS

Quarter	C	L	CH
G 101 Grammar	3	0	3
S 102 Typewriting	2	3°	3
T 110 Business Mathematics	5	0	5
S 101 Introduction to Business	5	0	5
S 106 Shorthand	3	2	4
	18	5	20

d Quarter	C	L	CH
G 102 Composition	3	0	3
S 103 Typewriting	2	3°	3
S 107 Shorthand	3	2	4
S 120 Accounting	5	2	6
Science Elective	3	0	3
	16	7	19

Quarter	C	L	CH
G 204 Oral Communications	3	0	3
S 104 Typewriting	2	3°	3
S 108 Shorthand	3	2	4
S 110 Office Machines	2	2	3
S 112 Filing	3	0	3
S 182MS Anatomy	3	0	3
	16	7	19

h Quarter	C	L	CH
G 103 Report Writing	3	0	3
S 206M Dictation and Transcription	3	2	4
S 205 Advanced Typewriting	2	3°	3
S 211 Office Machines	2	2	3
P 103S Concepts of Data Processing	4	0	4
S 183M Terminology and Vocabulary	3	0	3
	17	7	20

Quarter	C	L	CH
G 206 Business Communication	3	0	3
S 207M Dictation and Transcription	3	2	4
S 115 Business Law	3	0	3
l Science Elective	3	0	3
S 284M Terminology and Vocabulary	3	0	3
	15	2	16

nipulative laboratory" involves development of skills and job proficiency. Credit e quarter hour for each three hours of laboratory.

lass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Sixth Quarter C

T-BUS 208M Dictation and Transcription
T-BUS 271 Office Management
T-BUS 214 Secretarial Procedures
Elective

Total

ELECTIVES

Electives for the **Medical Secretarial Curriculum** may be selected from the f courses. The school will determine which of these are to be offered in an quarter of the program.

MEDICAL SECRETARY

C

T-BUS 121 Accounting
T-BUS 215M Office Application
T-ECO 108 Consumer Economics
T-ECO 102 Economics
T-PSY 112 Personality Development
T-BUS 116 Business Law

SOCIAL SCIENCE

T-SSC 201 Social Science
T-SSC 202 Social Science
T-PSY 206 Applied Psychology
T-SSC 205 American Institutions
T-POL 201 United States Government

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

SCIENTIFIC DATA PROCESSING

ose of Curriculum

e processing of data by electronic equipment has created vast changes ientific research and industry. The curriculum of Scientific Data ssing is designed, especially in the second year, to assist students in iring for the new techniques and stresses mathematics in each of the arters of work. The program provides graduates qualified to:

1. Apply currently available programming techniques to a defined problem with minimum supervision.
2. Program and operate any computer with a minimum of orientation.
3. Understand and master special techniques as the need occurs.
4. Communicate their properly documented programming decisions to personnel concerned.

phasis in the second year of the curriculum is upon scientific data ssing. Machines are used in the solution of research, production and eering problems.

dents learn calculus, numerical analysis, theory of probability and tics.

escription

e scientific data processing specialist analyzes and defines requirements evelop program for electronic data processing; conducts detailed ses of systems requirements, and develops all levels of block diagrams logical flow charts; translates program details into coded instructions; ops and prepares plans; establishes test data; tests, refines, and revises am. Evaluates and modifies existing programs as procedures or content ports change.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	C
T-ENG 101 Grammar	
T-MAT 101 Technical Mathematics	
T-MAT 121 Numbering System and Boolean Algebra	
T-EDP 101 Functional Wiring Principles	
T-EDP 104 Introduction to Data Processing Systems	
	1

Second Quarter	C
T-ENG 102 Composition	
T-MAT 102 Technical Mathematics	
T-EDP 106 Business Programming	
T-EDP 102 Functional Wiring Principles	
T-BUS 120 Accounting	
	1

Third Quarter	C
T-ENG 103 Report Writing	
T-EDP 108 Scientific Programming	
T-MAT 103 Technical Mathematics	
T-MAT 214 Statistics	
	1

Fourth Quarter	C
T-ENG 204 Oral Communication	
T-EDP 202 Programming System Techniques	
T-MAT 201 Technical Mathematics	
T-PHY 101 Physics: Properties of Matter	
	1

Fifth Quarter	C
Social Science Elective	
T-EDP 205 Linear Programming and Critical Path Method	
T-PHY 102 Physics: Work, Energy, Power	
T-MAT 225 Numerical Analysis	
	1

*“Manipulative laboratory” involves development of skills and job proficiency of one quarter hour for each three hours of laboratory.

C = Class Hrs. Per Week L = Lab Hrs. Per Week CH = Credit Hrs.

Quarter	**C**	**L**	**CH**
Science Elective	3	0	3
216 Research Project	1	8	5
103 Physics: Electricity	3	2	4
e	6	0	6
	13	10	18
Total			108

ELECTIVES

tives for the **Scientific Data Processing Curriculum** may be selected from the ng courses. The school will determine which of these are to be offered in any quarter of the program.

SCIENTIFIC DATA PROCESSING

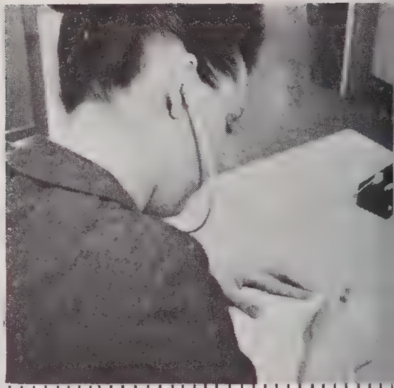
	C	L	Cr
215S Statistical Programming	3	2	4
219 Differential Equations	5	0	5
260 Introduction to System 360	3	0	3

SOCIAL SCIENCE

201 Social Science	3	0	3
202 Social Science	3	0	3
206 Applied Psychology	3	0	3
102 Economics	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3

ass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

TECHNICAL SECRETARY



Purpose of Curriculum

The Technical Secretary Curriculum is designed to prepare a
for a position in the office of a firm dealing in research, developm
production in the scientific fields. The curriculum offers stud
necessary secretarial skills and the required background of unders
and appreciation of the scientific method, the beginnings of a t
vocabulary and a feeling of respect for accuracy that will be ess
later work in the field.

Job Description

Graduates of this program may qualify for employment as steno
secretaries, technical secretaries, and possibly as private secretari
are in demand where engineers and other technical personnel fin
for secretarial help who can understand the specialized lang
Electrical, Mechanical, Civil, or Chemical Engineers. The duti
engineering and technical secretary may consist of taking dicta
transcribing letters, memoranda and reports, meeting office cal
screening telephone calls, filing, and scheduling appointments. G
of this program, since they have received a background of scie
engineering terminology in addition to their business backgro
admirably prepared to work with engineering reports, records ar
spondence.

SUGGESTED CURRICULUM BY QUARTERS

uarter	C	L	CH
G 101 Grammar	3	0	3
102 Typewriting	2	3°	3
T 110 Business Mathematics	5	0	5
101 Introduction to Business	5	0	5
106 Shorthand	3	2	4
	18	5	20

Quarter	C	L	CH
102 Composition	3	0	3
103 Typewriting	2	3	3
107 Shorthand	3	2	4
120 Accounting	5	2	6
Science Elective	3	0	3
	16	7	19

Quarter	C	L	CH
204 Oral Communications	3	0	3
104 Typewriting	2	3°	3
108 Shorthand	3	2	4
110 Office Machines	2	2	3
112 Filing	3	0	3
183T Terminology and Vocabulary	3	0	3
	16	7	19

Quarter	C	L	CH
103 Report Writing	3	0	3
206T Dictation and Transcription	3	2	4
205 Advanced Typewriting	2	3°	3
211 Office Machines	2	2	3
103 Concepts of Data Processing	4	0	4
e	3	0	3
	17	7	20

uarter	C	L	CH
206 Business Communication	3	0	3
207T Dictation and Transcription	3	2	4

ipulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory.

ass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

T-BUS 115 Business Law
Social Science Elective
Elective

1

Sixth Quarter **C**

T-BUS 208T Dictation and Transcription
T-BUS 271 Office Management
T-BUS 214 Secretarial Procedures
Elective

1

Tota

ELECTIVES

Electives for the **Technical Secretarial Curriculum** may be selected from the f courses. The school will determine which of these are to be offered in ar quarter of the program.

TECHNICAL SECRETARY

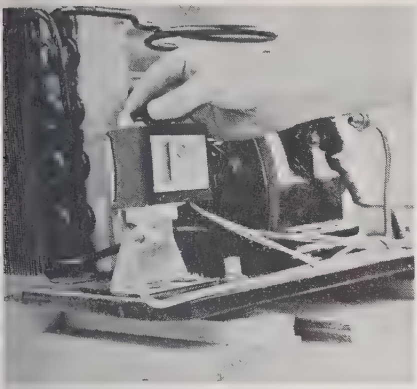
T-PSY 112 Personality Development
T-BUS 121 Accounting
T-ECO 102 Economics
T-BUS 215T Office Application
T-ECO 108 Consumer Economics
T-BUS 116 Business Law

SOCIAL SCIENCE

T-SSC 201 Social Science
T-SSC 202 Social Science
T-PSY 206 Applied Psychology
T-SSC 205 American Institutions
T-POL 201 United States Government

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs

ENGINEERING TECHNOLOGY



AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

pse of Curriculum

recent years the use of air-conditioning and refrigeration equipment ncreased tremendously. Practically all new building construction for ess and commercial use have “year-round” air-conditioning systems. homes now have air conditioning and the trend is toward greater use ear-round” systems for cooling and heating. Transportation systems ood industries are requiring greater use of refrigeration systems for t, storage and display of products. With this great upswing in the use -conditioning and refrigeration equipment, a greater demand is made ined personnel to plan and supervise installations and to supervise the tion and maintenance of this equipment.

e curriculum is designed to prepare the student to assist in planning, ling, operating and maintaining air conditioning equipment. The red technical information is presented and related skills are developed n will enable the graduate to function efficiently when working with eers, systems designers, skilled craftsmen, salesmen, and others in the Considerable emphasis is placed on self-development in an effort to urage the graduate to continue to study and grow as the industry nces.

escription

e air conditioning and refrigeration technician may be employed in of sales, installation, maintenance, production drafting, systems design, a research engineering assistant. He is involved with equipment for ating temperature and humidity. He works with control systems, ducts piping for distribution of air, water, steam, and refrigerants. His duties be concerned with any or all of these systems and components.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	C
T-ENG 101 Grammar	
T-MAT 101 Technical Mathematics	
T-PHY 101 Physics: Properties of Matter	
T-DFT 101 Technical Drafting	
T-AHR 101 Fundamentals of Refrigeration I	

Second Quarter	C
T-ENG 102 Composition	
TM-AT 102 Technical Mathematics	
T-PHY 102 Physics: Work, Energy, Power	
T-DFT 102 Technical Drafting	
T-AHR 102 Fundamentals of Refrigeration II	

Third Quarter	C
T-ENG 103 Report Writing	
T-MAT 103 Technical Mathematics	
T-PHY 103 Physics: Electricity	
T-AHR 103 Commercial Refrigeration Systems Designs	

Fourth Quarter	C
T-ENG 204 Oral Communication	
T-DFT 204 Description Geometry	
T-PHY 231 Fluid Mechanics	
T-AHR 201 Heating Principles	
T-AHR 216 Circuits & Controls I	

Fifth Quarter	C
Social Science Elective	
T-AHR 203 Air Conditioning Principles	
T-DFT 226 Air Conditioning Systems Drawing	
Elective	

°"Manipulative laboratory" involves development of skills and job proficienc
of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs

uarter	C	L	CH
Science Elective	3	0	3
209 Air Conditioning Systems Design	5	6°	7
227 Estimating & Contracts	3	6°	5
e			3
	11	12	18
	Total		110

N FOR STUDENTS COMPLETING DIPLOMA PROGRAM

tes of a diploma curriculum in air conditioning and refrigeration with the recom-
ion of the department head and the faculty advisor will be permitted to under-
additional four quarters of technical instruction leading to an associate degree
Conditioning and Refrigeration.

uarter	C	L	CH
-102	3	0	3
-101	2	4°	3°
-209	5	6	7
-101	5	0	5
	15	10	18

uarter	C	L	CH
-101	3	2	4
T-102	5	0	5
-102	0	6°	2
-203	5	6	7
	13	14	18

uarter	C	L	CH
-102	3	2	4
-103	3	0	3
T-204	2	4	4
R-227	3	6°	5
	11	12	16

uarter			
-204	3	0	3
-231	3	0	3
i Elec	3	0	3

ipulative laboratory" involves development of skills and job proficiency. Credit
quarter hour for each three hours of laboratory

ass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Soc Sci Elec	3
AHR 230 Seminar & Research	3
	15

ELECTIVES

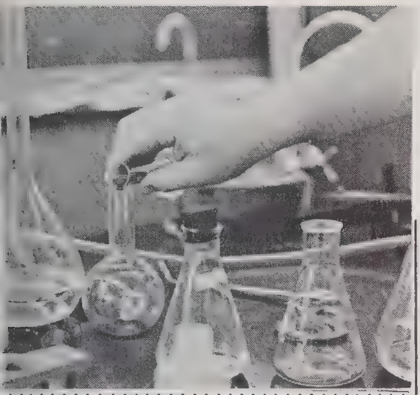
Electives for the **Air Conditioning and Refrigeration Technology Curriculum** selected from the following courses. The school will determine which of these a offered in any given quarter of the program.

TECHNICAL

	C
T-AHR 217 Circuits and Controls II	
T-AHR 230 Seminar and Research	
T-AHR 210 Installation and Design Problems	
T-AHR 202 Fuels and Burners	

SOCIAL SCIENCE

T-SSC 201 Social Science I	
T-SSC 202 Social Science II	
T-PSY 206 Applied Psychology	
T-ECO 102 Economics	
T-SSC 205 American Institutions	
T-POL 201 United States Government	
T-ISC 201 Industrial Organization and Management	



CHEMICAL TECHNOLOGY

se of Curriculum

; curriculum guide provides a program for instruction of students in sic knowledge and skills involved in laboratory and plant operations chemical industry. Technical knowledge and laboratory techniques nphasized and a relationship between the theoretical and practical ined.

curriculum is designed to prepare persons to serve in two distinct (1) research assistant to a chemist in the laboratory; and (2) planning roduction assistant to chemical engineers in converting the research st's discoveries into actual industrial production. Research laboratory nts must be well grounded in chemical analysis, testing, and synthesis. ical production assistants must have command of a basic knowledge of cal processing and ability to use main types of equipment and nery for making chemical products.

escription

chemical technician performs quantitative and qualitative chemical es of processes involved in a production situation. Tests samples of aterials to determine that they are within specification limits required nufacturing of desired products. Analyzes samples of product inter- tes at manufacturing steps so as to supply data to processing personnel ich they may control reactions involved, to determine whether sing is being performed according to plant specifications, and to current production problems. Analyzes samples of finished products to nine whether quality warrants its release for shipment, using analytical ds to determine percentages, such as acetone extract, heating loss, or ntent. Prepares laboratory test reports and checks analyses with cations and consults with laboratory supervisors. Makes special es as necessary. May secure samples used.

SUGGESTED CURRICULUM BY QUARTERS

COURSE TITLE

First Quarter	**C**
T-ENG 101 Grammar	
T-MAT 101 Technical Math	
T-DFT 101 Technical Drafting	
T-CHM 111 General Chemistry I	
Social Science Elective	

Second Quarter	**C**
T-ENG 102 Composition	
T-MAT 102 Technical Math	
T-PHY 101 Properties of Matter	
T-DFT 102 Technical Drafting	
T-CHM 112 General Chemistry II	

Third Quarter	**C**
T-ENG 103 Report Writing	
T-MAT 103 Technical Math	
T-PHY 102 Work Energy and Power	
T-CHM 113S General Chemistry III	
T-CHM 250S Qualitative Analysis	

Fourth Quarter	**C**
T-ENG 204 Oral Communication	
T-CHM 121 Quantitative Analysis I	
T-CHM 227 Physical Chemistry	
T-PHY 103 Electricity	
Social Science Elective	

Fifth Quarter	**C**
T-CHM 222 Quantitative Analysis II	
T-CHM 231 Organic Chemistry I	

°"Manipulative laboratory" involves development of skills and job proficiency of one quarter hour for each three hours of laboratory.

C = Class Hrs. Per Week   L = Lab Hrs. Per Week   CH = Credit Hrs.

04 Light and Sound	3	2	4
:	5	0	5
	13	17	19

ıarter	**C**	**L**	**CH**
232 Organic Chemistry II	3	6°	5
241 Industrial Chem. Analysis I	3	9°	6
s			3
			14

Quarter	**C**	**L**	**CH**
233 Organic Chemistry III	3	6	5
242 Industrial Chem. Analysis II	3	12	7
s			3
			15

Total 127

ELECTIVES

ves for the **Chemical Technology Curriculum** will be selected from the following The school may determine which of these are to be offered in any given ɔf the program.

TECHNICAL

116 Engineering Materials	3	0	3
201 Technical Mathematics	5	0	5
219 Differential Equations	5	0	5
104 Physics: Light and Sound	3	2	4
231 Fluid Mechanics	3	0	3

SOCIAL SCIENCE

01 Social Science	3	0	3
02 Social Science	3	0	3
06 Applied Psychology	3	0	3
102 Economics	3	0	3
05 American Institutions	3	0	3
201 United States Government	3	0	3
01 Industrial Organization and Management	3	0	3

ɔulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory.

s Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr

DRAFTING AND DESIGN TECHNOLOGY

Purpose of Curriculum

This curriculum guide was prepared for the purpose of outlining
ing program for students of mechanical drafting and design tech
There are certain identifiable duties which are common to all tech
of this general classification and which comprise the basic areas of te
knowledge they need. This curriculum has been designed for t
persons in the accepted performance of these basic duties that
assigned, and to enable the individual student to become proficie
short time after he becomes employed in the industry.

Courses in general education have been included to give a stud
assurance and understanding that comes with education upon a broa
The technician associates with many levels of thought and expr
administrative personnel, scientists, engineers, skilled workmen—and
able to communicate effectively with all levels. Courses containing e
information from related subject areas, such as mathematics, physi
mechanics have been included in order to provide the student a
academic base for his training. Emphasis is placed upon ability to th
plan, as well as drafting procedures and techniques.

Job Description

Mechanical drafting and design technicians are concerned w
preparation of drawings for design proposals, for experimental mod
items for production use.

These technicians perform many aspects of drafting in a specialize
such as the developing of the drawing of a section, sub-assembly o
component. Investigating design factors and availability of mater
equipment, production methods and facilities are frequent assig
They assist in the design of units and controls from specificati

g drawings of existing units and reports on functional performance. ıay draw components in industrial fields based on engineers' original :oncepts or specific ideas. Also, they may be assigned as coordinators execution of related work of other design, production, tooling, l and planning groups. Technicians with experience in this classifica- .y often supervise the preparation of working drawings.

: technicians are employed in many types of manufacturing, fabrica- ·search development and service industries. Substantial numbers · employed in communications, transportation, public utilities, con- engineering firms, and federal, state, and local governments.

SUGGESTED CURRICULUM BY QUARTERS

arter	C	L	CH
111 General Chemistry	4	3	5
101 Grammar	3	0	3
101 Technical Drafting	2	4	3
101 Technical Mathematics	5	0	5
101 Machine Processes	0	6	2
	14	13	18

)uarter	C	L	CH
102 Composition	3	0	3
101 Fundamentals of Electricity	4	4	6
102 Technical Mathematics	5	0	5
.01 Properties of Matter	3	2	4
	15	6	18

ıarter	C	L	CH
102 Machine Processes	0	6°	2
204 Oral Communication	3	0	3
102 Technical Drafting	2	4	3
103 Technical Mathematics	5	0	5
02 Work, Energy & Power	3	2	4
	13	12	17

)uarter	C	L	CH
03 Physics: Electricity	3	2	4
103 Report Writing	3	0	3

lative laboratory" involves development of skills and job proficiency. Credit ırter hour for each three hours of laboratory.

Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

T-DFT 103 Technical Drafting
T-PHY 106 Applied Mechanics
T-MEC 210 Physical Metallurgy

Fifth Quarter C

T-DFT 201 Technical Drafting
T-DFT 204 Descriptive Geometry
T-MEC 205 Strength of Materials
T-MEC 211 Physical Metallurgy

Sixth Quarter C

T-DFT 205 Design Drafting I
T-DFT 211 Mechanisms
Social Science Elective
T-EDP 104 Introduction to Data Processing

Seventh Quarter C

T-DFT 206 Design Drafting II
T-MEC 235 Hydraulics & Pneumatics
Technical Elective
Technical Elective
Social Science Elective

Tota

C = Class Hrs. Per Week L = Lab Hrs. Per Week CH = Credit Hrs.

ELECTIVES

ives for the **Drafting & Design Technology Curriculum** may be selected from owing courses. The school will determine which of these are to be offered in en quarter of the program.

TECHNICAL

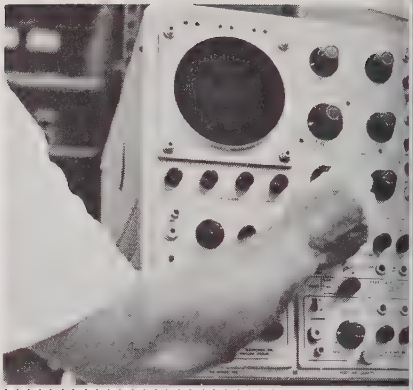
	C	L	Cr
102 Fundamentals of Electricity	4	6	6
212 Jig and Fixture Design	2	6	4
201 Industrial Controls	3	2	4
201 Electrical Machinery	3	0	3
237 Control Systems	2	4	4
201 Industrial Organization and Management	3	0	3

SOCIAL SCIENCE

201 Social Science I	3	0	3
202 Social Science II	3	0	3
206 Applied Psychology	3	0	3
102 Economics	3	0	3
205 American Institutions	3	0	3
201 United States Government	3	0	3

ss Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

ELECTRONICS TECHNOLOGY



Purpose of Curriculum

The field of electronics has developed at a rapid pace since the the century. For many years the major concern of electronics was area of communications. Developments during World War II and period since have revolutionized production techniques. New ind have been established to supplement the need and demand for elec equipment.

Many opportunities exist for men and women with a technical edu in electronics. This curriculum provides a basic background in ele related theory with practical applications of electronics for busine industry. Courses are designed to develop competent electronics techn who may take their place as an assistant to an engineer, or as a between the engineer and the skilled craftsman.

Job Description

The electronics technician may start in one or more of the fol areas: research, design, development, production, maintenance or He may be an assistant to an engineer, an engineering aide, lab technician, supervisor or equipment specialist. His training is similar of an engineer, but in less depth and more practical in application. function as a liaison between an engineer and the skilled craf

SUGGESTED CURRICULUM BY QUARTERS

arter	**C**	**L**	**CH**
101 Grammar	3	0	3
101 Fundamentals of Electricity	4	4	6
104 Introduction to Electronic Data Processing Systems	3	2	4
101 Technical Mathematics	5	0	5
101 Machine Processes	0	6°	2
	15	12	20

Quarter	**C**	**L**	**CH**
102 Composition	3	0	3
111 General Chemistry	4	3°	5
101 Technical Drafting	2	4°	3
102 Technical Mathematics	5	0	5
101 Properties of Matter	3	2	4
	17	9	20

uarter	**C**	**L**	**CH**
204 Oral Communication	3	0	3
102 Fundamentals of Electricity	4	6°	6
102 Technical Drafting	2	4°	3
103 Technical Mathematics	5	0	5
102 Work, Energy & Power	3	2	4
	17	12	21

Quarter	**C**	**L**	**CH**
103 Report Writing	3	0	3
101 Electronic Instruments and Measurements	1	6°	3
105 Control Devices	5	6°	7
201 Technical Mathematics	5	0	5
	14	12	18

uarter	**C**	**L**	**CH**
205 Applications of Vacuum Tubes and Transistors	5	6°	7
208 Solid State & Thin Film Devices	5	2	6
214 Wave Shaping & Pulse Circuits	2	3°	3
104 Light & Sound	3	2	4
	15	13	20

pulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory.

ss Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Sixth Quarter C

T-ELN 215 Wave Shaping & Pulse Circuits
T-ELN 220 Electronic Systems
T-ELN 210 Semiconductor Circuit Analysis
Social Science Elective

Seventh Quarter C

T-ELN 227 UHF & Microwave Systems
T-ELN 235 Industrial Instrumentation
T-ELN 240 Digital Computers
Social Science Elective

Tota

ELECTIVES

Electives for the **Electronics Technology Curriculum** may be selected f following courses. The school will determine which of these are to be offere given quarter of the program.

TECHNICAL

T-ELN 225 Transmission and Propagation
T-ELN 230 Television Systems
T-ELN 245 Electronic Design Project
T-ELC 210 Rotating Devices
T-MAT 208 Calculus and Laplace Transforms for Electronics
T-MEC 110 Fundamental Mechanisms

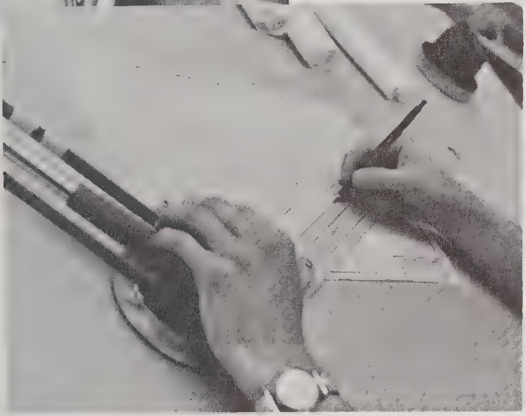
SOCIAL SCIENCE

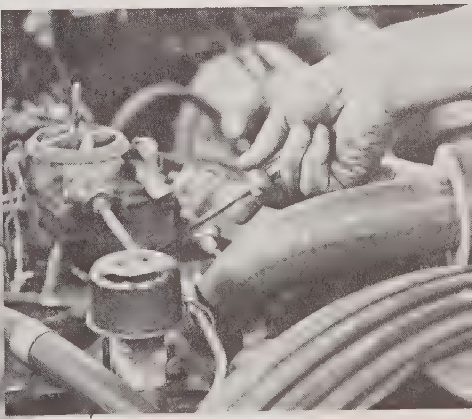
C

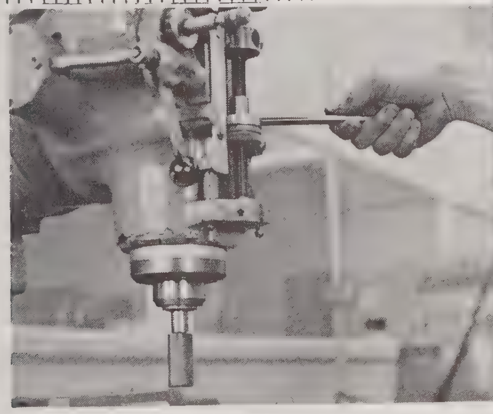
T-SSC 201 Social Science
T-SSC 202 Social Science
T-PSY 206 Applied Psychology
T-ECO 102 Economics
T-SSC 205 American Institutions
T-POL 201 United States Government

°"Manipulative laboratory" involves development of skills and job proficienc of one quarter hour for each three hours of laboratory.
C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

DIPLOMA PROGRAMS







DIPLOMA PROGRAMS

(one-year)

ADMISSION REQUIREMENTS

lowing are minimum admission requirements to the regular one-year tory curriculums and vocational programs:

m Admission Requirements

idate for admission to the regular trade-vocational training programs eet the following qualifications:

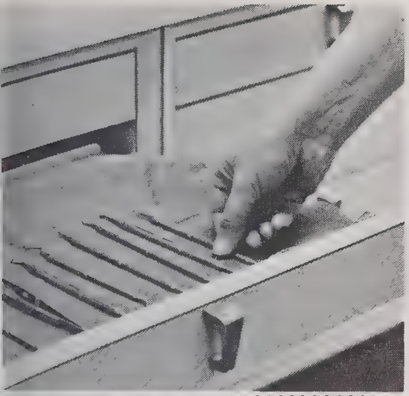
1. Must be at least 18 years of age and have the ability to enter into or make advancement in the area in which enrolled.
2. Must have satisfactorily completed a minimum of eight (8) units of accredited secondary school work. Those who have not successfully completed eight (8) units of such work will be required to take other standard and/or local institution tests.
3. Must demonstrate aptitude for vocational training as determined by standard and/or local institution tests to insure ability to meet job requirements in the desired trade.
4. May be required to have a personal interview with designated school representative.
5. Must be in acceptable physical and mental health to meet qualifications for a given occupation.

ition to the above minimum admission requirements, more specific uisites are necessary in some programs.

ggested that students should have completed one unit of algebra.

ies are available at the Institute for removal of academic deficiencies.

HEALTH OCCUPATIONS



DENTAL ASSISTING

e of Curriculum

al assisting is one of the fastest growing occupations for women today. le of the dental assistant has evolved from that of receptionist only to a fully participating member of the dental team; primary emphasis iairside assisting, although she continues to perform numerous duties to office management, patient relations, and laboratory procedures. ntal profession now recognizes the contribution the dental assistant ike to the extension of services and increased productivity of the office. Projected needs call for a fivefold expansion in numbers of tes and continued improvement in the quality of training programs.

specific objectives of the Dental Assisting Curriculum are to develop lowing competencies:

Understanding of the business procedures of the dental office.

Understanding of principles and beginning skill in the procedures of chairside assisting, including effective patient relationships.

Understanding of principles and beginning skills in performance of selected laboratory procedures commonly carried out in the dental office.

scription

duties of the dental assistant vary somewhat, depending on the r of auxiliary workers employed. In some offices the assistant is sible for all three areas described below; in others, she may be sible for only one area.

endering chairside assistance to the dentist, the dental assistant is sible for placing instruments for use, keeping the operating field uring treatment, preparing restorative materials and dental cements,

passing materials and instruments during dental procedures, and car
operatory after use. She may take X-rays of the teeth and apply fl
under the direction of the dentist. In the laboratory of the dental off
may make models of the teeth and mouth, cast inlays and crowns,
exposed X-ray films and mount finished X-rays. In acting as office m
and receptionist, she receives patients, arranges appointments,
treatments, keeps accounts, maintains inventories, and orders su

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	C
DEN 1001 Introduction to Dental Assisting	
DEN 1002 Dental Materials	
DEN 1003 Preclinical Sciences I	
ENG 1102 Communication Skills	
PSY 1112 Personality Development	
	1

Second Quarter	C
DEN 1004 Preclinical Sciences II	
DEN 1005 Dental Accounting	
DEN 1006 Clinical Procedures I	
BUS 1102 Typewriting	
	1

Third Quarter	C
DEN 1007 Clinical Procedures II	
DEN 1008 Dental Office Management	
DEN 1009 Dental Office Practice I	
ENG 1103 Report Writing	
	1

Fourth Quarter	C
DEN 1010 Dental Office Practice II	
DEN 1011 Dental Assistant Seminar	

Tot

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of one quarter hour for each three hours of laboratory.

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PRACTICAL NURSING

ccelerated growth in North Carolina and rapid advancement in l technology demands a large increase in the number of well-trained, e personnel for health service positions.

im of this program is to make available the opportunity for the ted male and female to prepare themselves for participation in the f patients of all ages, in various states of dependency, and with a of illness conditions.

ts are selected on the basis of interest in and aptitude for nursing, rmined by pre-entrance test, high school records, personal interviews, reports, and character references.

ption of Program

ractical Nurse Education program is taught in a 4-quarter period of om instruction and supervised nursing practice.

ing a period of classroom instruction in fundamentals of nursing, inciples from the basic biological and social sciences, the student es nursing skills under faculty supervision in the hospital areas. The t advances in her studies, and in the nursing care of patients of all rough planned assignments in medical-surgical Nursing, care of the r and newborn infant, and the care of the sick child.

learning opportunities are planned with the obstetrician and pedia- for observations in offices and a public health clinic.

raduate practical nurse is eligible to take, and must pass, the North na Board of Nursing Licensing exam for practical nurses in order to e in North Carolina.

PN is qualified and prepared to function in a variety of situations: als, nursing homes, clinics, doctors' offices, private duty nursing, and in public health programs. In all situations the LPN functions supervision of a registered nurse and/or a licensed physician.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	C	L
PNE 1001 Fundamentals of Health	2	
PNE 1002 Basic Science	6	
PNE 1003 Fundamentals of Practical Nursing	4	
PSY 1101 Human Relations	3	
	15	

Second Quarter	C	L
PNE 1013 Mental Health	2	
*PNE 1006 Maternity Nursing	2	
PNE 1005 Fundamentals of Medical-Surgical Nursing I	2	
PNE 1004 Clinical Nursing Experience I	0	
	6	

Third Quarter	C	L
*PNE 1007 Nursing of Children	2	
PNE 1009 Medical-Surgical Nursing II	4	
PNE 1008 Clinical Nursing Experience II	0	
	6	

Fourth Quarter	C	L
PNE 1012 Advanced Medical-Surgical Nursing III	4	
PNE 1014 Vocational Adjustments	2	
PNE 1011 Clinical Nursing Experience III	0	
	6	

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*A portion of the class may be scheduled to take these courses during another

MECHANICAL OCCUPATIONS

AIR CONDITIONING AND REFRIGERATION MECHANICS

›se of Curriculum

recent years the use of air conditioning and refrigeration equipment ıcreased tremendously. Practically all new building construction for ess and commercial use have "all year" comfort systems. Many homes ıave air conditioning and the trend is toward greater use of "all year" ns of cooling and heating. The food industry is requiring greater use rigeration systems in freezing, storage, and display of products. With reat upswing in the use of air conditioning and refrigeration equipment, ıter demand is made on trained personnel to install, operate, maintain ervice this equipment.

s curriculum is designed to give the students practical knowledge that nable them to become capable service men in the industry. The ple objective has been to outline the required technical and related ction to enable them to understand the basic principles involved in nstruction, operation, and maintenance of equipment. Job opportunities with commercial companies that specialize in air conditioning, auto- heating, sheet metal and commercial refrigeration installation and e. The service man is employable in areas of sales, maintenance, lation and in the growing fields of truck and trailer refrigeration.

)escription

e air conditioning and refrigeration mechanic installs, inspects, main- services and repairs domestic and commercial equipment. Connects rs, compressors, temperature controls, humidity controls, and circu- fans to control panels: Tests systems, observes pressure and vacuum es and adjusts controls to insure proper operation.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	C
AHR 1121 Principles of Refrigeration	5
MAT 1101 Fundamentals of Mathematics	5
ENG 1101 Reading Improvement	2
PHY 1101 Applied Science	3
DFT 1104 Blueprint Reading: Mechanical	0
	15

Second Quarter	C
AHR 1122 Domestic and Commercial Refrigeration	3
MAT 1102 Algebra	5
ENG 1102 Communication Skills	3
ELC 1102 Applied Electricity	2
DFT 116 Blueprint Reading: Air Conditioning	1
	14

Third Quarter	C
AHR 1123 Principles of Air Conditioning	5
AHR 1128 Automatic Controls	3
PSY 1101 Human Relations	3
WLD 1101 Basic Gas Welding	0
	11

Fourth Quarter	C
AHR 1130 Duct Layout and Fabrication	2
AHR 1124 Air Conditioning and Refrigeration Servicing	3
AHR 1126 All Year Comfort System	3
BUS 1103 Small Business Operations	3
	11

FOR THOSE WHO DESIRE ADDITIONAL TRAINING

Graduates of a diploma curriculum in air conditioning and refrigeratio the recommendation of the department head and the faculty advisc be permitted to undertake an additional four quarters of technical ir tion leading to an associate degree in Air Conditioning and Refriger

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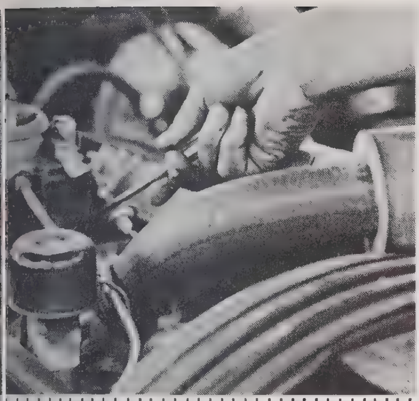

AUTOMOTIVE MECHANICS

se of Curriculum

s curriculum provides a training program for developing the basic
ledge and skills needed to inspect, diagnose, repair or adjust auto-
e vehicles. Manual skills are developed in practical shop work.
ugh understanding of the operating principles involved in the modern
obile comes in class assignments, discussion, and shop practice.

nplexity in automotive vehicles increases each year because of scientif-
covery and new engineering. These changes are reflected not only in
ger vehicles, but also in trucks, buses and a variety of gasoline-
red equipment. This curriculum provides a basis for the student to
are and adapt to new techniques for servicing and repair as vehicles
anged year by year.

escription

omobile mechanics maintain and repair mechanical, electrical, and
parts of passenger cars, trucks, and buses. In some communities and
areas they also may service tractors or marine engines and other
ne-powered equipment. Mechanics inspect and test to determine the
of faulty operation. They repair or replace defective parts to restore
ehicle or machine to proper operating condition. They use shop
als and other technical publications.

omotive mechanics in smaller shops usually are general mechanics
ied to perform a variety of repair jobs. A large number of automobile
anics specialize in particular types of repair work. For example, some
pecialize in repairing only power steering and power brakes, or auto-
transmissions. Usually such specialists have an all-round knowledge of
otive repair and may occasionally be called upon to do other types of

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	**C**
PME 1101 Internal Combustion Engines	
MAT 1101 Fundamentals of Mathematics	
ENG 1101 Reading Improvement	
PHY 1101 Applied Science	
	1

Second Quarter	**C**
PME 1102 Engine Electrical and Fuel Systems	
ENG 1102 Communications Skills	
DFT 1101 Schematics and Diagrams: Power Mechanics	
PHY 1102 Applied Science	
	1

Third Quarter	**C**
AUT 1123 Automotive Chassis and Suspension Systems	
AUT 1121 Braking Systems	
PSY 1101 Human Relations	
AHR 1101 Automotive Air Conditioning	
WLD 1101 Basic Gas Welding	
	1

Fourth Quarter	**C**
AUT 1124 Automotive Power Train Systems	
AUT 1125 Automotive Servicing	
BUS 1103 Small Business Operations	

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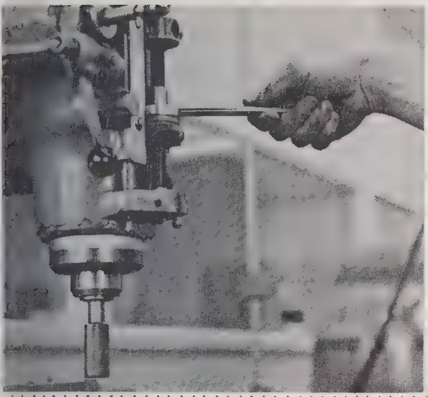

MACHINIST TRADE

ose of Curriculum

is curriculum was prepared to meet a definite need for training of inists. Surveys recently completed in North Carolina show that many e existing industries lack time and facilities for training enough inists to meet present and planned needs. Expanding industries already d in our State and new industries under development invariably ss the need for skilled craftsmen who have the background knowledge otential to advance.

is guide is designed to give learners the opportunity to acquire basic and the related technical information necessary to gain employment uild a profitable career in the machine shop industry in the State. It nprised of the joint views of committees responsible for its development.

escription

e machinist is a skilled metal worker who shapes metal parts by using ine tools and hand tools. His training and experience enable him to and carry through all the operations needed in turning out a machined uct and to switch readily from one kind of product to another. A inist is able to select the proper tools and material required for each d to plan the cutting and finishing operations in their proper order so e can complete the finished work according to blueprint or written fications. He makes standard shop computations relating to dimensions rk, tooling, feeds, and speeds of machining. He often uses precision uring instruments such as micrometers and gages to measure the acy of his work to thousandths of an inch.

is skilled worker must be able to set up and operate most types of ine tools. The machinist also must know the composition of metals t he can heat and quench cutting tools and parts to improve machin- y. His wide knowledge enables him to turn a block of metal into an ate, precise part.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	C
MEC 1101 Machine Shop Theory and Practice	
MAT 1101 Fundamentals of Mathematics	
DFT 1104 Blueprint Reading: Mechanical	
ENG 1101 Reading Improvement	
PHY 1101 Applied Science	
	1

Second Quarter	C
MEC 1102 Machine Shop Theory and Practice	
MAT 1103 Geometry	
DFT 1105 Blueprint Reading: Mechanical	
PHY 1102 Applied Science	
ENG 1102 Communication Skills	
	1

Third Quarter	C
MEC 1103 Machine Shop Theory and Practice	
MEC 1115 Treatment of Ferrous Metals	
DFT 1106 Blueprint Reading: Mechanical	
MAT 1104 Trigonometry	
PSY 1101 Human Relations	
	1

Fourth Quarter	C
MEC 1104 Machine Shop Theory and Practice	
MEC 1116 Treatment of Non-Ferrous Metals	
WLD 1101 Basic Gas Welding	
MAT 1123 Machinist Mathematics	
BUS 1105 Industrial Organizations	
	1

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MECHANICAL DRAFTING

se of Curriculum

; curriculum is designed to prepare students to enter the field of
ınical drafting. The first two quarters contain courses basic to all
of drafting. The third and fourth quarters contain specialization and
l courses that prepare one to enter mechanical drafting occupations.

h course is prepared to enable an individual to advance rapidly in
ıg proficiency upon entering the field of work. Courses are arranged
uence to develop drafting skills and proficiency in mathematics and
e. The draftsman associates with many levels of personnel—admini-
e, architects, engineers, skilled workmen—and must be able to com-
ate effectively with them. Courses to develop knowledge and skills in
ınication, human relations, economics and industrial organization
ovided to assist the student in developing understandings and con-
e in his relations with other persons.

escription

ftsman prepares clear, complete, and accurate working plans and
drawings, from rough or detailed sketches or notes for engineering or
acturing purposes, according to the specified dimensions: makes final
of the proposed drawing, checking dimension of parts, materials to
d, the relation of one part to another, and the relation of the various
o the whole structure. Makes any adjustments or changes necessary
ired. Inks in lines and letters on pencil drawings as required. Exer-
nanual skill in the manipulation of triangle, T-square, and other
g tools. Lays tracing paper on drawing and traces drawing in pencil
. Makes charts for representation of statistical data. Makes finished
s from sketches. Utilizes knowledge of various machines, engineering
es, mathematics, building materials, and other physical sciences to
ete the drawings.

Mechanical draftsman performs the general duties of a draftsm also specializes in making rough drafting sketches of proposed mec devices, and then drawing necessary details. Prepares accurate scal ings of parts or machines from specifications.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	**C**
DFT 1121 Drafting	
MAT 1103 Geometry	
ENG 1101 Reading Improvement	
PHY 1101 Applied Science	
	1

Second Quarter	**C**
DFT 1122 Drafting	
DFT 1125 Descriptive Geometry	
MAT 1102 Algebra	
ENG 1102 Communication Skills	
PHY 1102 Applied Science	
	1

Third Quarter	**C**
DFT 1131 Mechanical Drafting	
MAT 1104 Trigonometry	
PSY 1101 Human Relations	
MEC 1113 Shop Processes	
MEC 1115 Treatment of Ferrous Metals	
	1

Fourth Quarter	**C**
DFT 1132 Mechanical Drafting	
MEC 1114 Shop Processes	
MEC 1116 Treatment of Non-Ferrous Metals	
BUS 1105 Industrial Organizations	
	1

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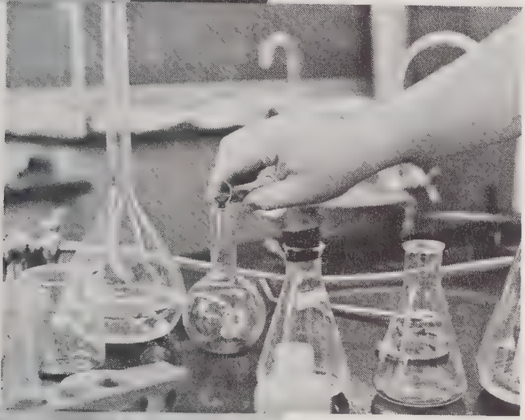
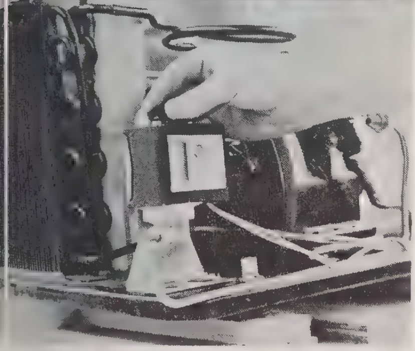
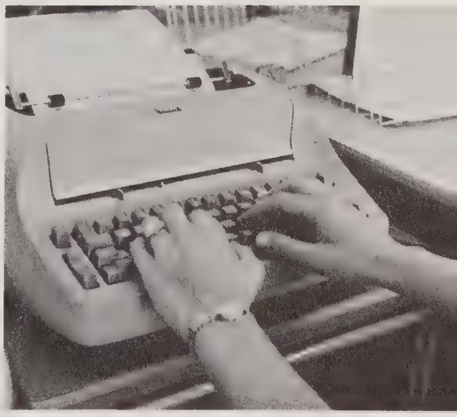
COURSES OF INSTRUCTION







AIR CONDITIONING AND REFRIGERATION

R 101 Fundamentals of Refrigeration I 4 3° 5

ninology, laws of refrigeration, absolute pressure and absolute temperature, conversion units; specific heat, latent heat, and sensible heat; measurement of quantity and intensity; tons of refrigeration, pressure temperature relationships, r of heat by conduction, convection and radiation; elementary refrigeration, ration cycle and refrigerant controls. Tools, materials and methods applicable to ditioning, and refrigeration.
uisite: None.

R 102 Fundamentals of Refrigeration II 3 6° 5

igerants and their application in commercial refrigeration; system components, ries, installation procedures and techniques; diagnosing service problems of nical difficulties; methods of defrosting; and making sketches for high, medium, w temperature installation. Symbols for refrigeration and piping equipment will d in making sketches.
uisites: T-AHR 101, T-PHY 101.

R 103 Commercial Refrigeration Systems Design

3 6° 5

edures of load calculating used in commercial refrigeration. Various types of tions are studied with emphasis on the product to be cooled, the desired atures to be maintained, and humidity conditions. Problems involving system and component capacity. Use of heat load charts, pipe sizing tables, manu- d data, and specification sheets.
isite: T-AHR 102.

R 201 Heating Principles 3 4 5

m air systems, heat emitters, electric heating, forced hot water and steam ; systems including selection and sizing of equipment—registers, grills, furnaces, radiators, baseboards, piping, and ducts. Fuels and burners used in supplying r various types of heating systems—coal, oil, natural gas, manufactured gas, d petroleum gas, and electricity. Experiments in equipment selection, installation, ng, and servicing will be conducted. Heating layout and specifications for an g structure or one in blueprint stage will be prepared.
isites: T-PHY 101, T-DFT 102.

202 Fuels and Burners 2 3° 3

nced course in heating systems with emphasis on new types of fuels and . Demonstrations and experiments with mock-ups and sample systems of gas, and electrical installations. Experiments in equipment selection, installation, intenance will be conducted.
isite: T-AHR 201.

203 Air-Conditioning Principles 5 6° 7

ntroduction to air distribution. Humidity, saturated and unsaturated mixtures; metric charts and graphs; specific heat and air flow calculations, heat load

calculations, the state of mixture of two air streams, bypass factor and dehumidi
Prerequisite: T-AHR 103.

T-AHR 209 Air-Conditioning System Design 5 6°

Practical procedures and data for calculating heat loss and heat gain in res structures. Much of the data is secured from the ASHRAE guide and data bo
Prerequisites: T-AHR 203, T-AHR 201.

T-AHR 210 Installation and Design Problems 2 6°

This course will consist of making drawings from designs that emphasize com refrigeration and air-conditioning layouts. Information is gathered, calculati made, schematic drawings are prepared, and specifications written for the s installations.
Prerequisites: T-DFT 226, T-AHR 203.

T-AHR 216 Circuits and Controls I 3 3°

Electric, electronic and pneumatic controls as related to ventilation, refrigerati air-conditioning systems. Practice in layouts, including symbols and schematic di Laboratory work in installations of control systems. Test instruments and th System adjustments for proper operation.
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103.

T-AHR 217 Circuits and Controls II 3 3°

Practice in layouts, selection, installation and trouble-shooting of conv refrigeration and air conditioning control systems. Class and laboratory work i control of residential and commercial heating and air conditioning systems. problems of mechanical refrigeration, zone and central-fan systems. Unit heat ventilators, peripheral air conditioning units and radiant-panel heating are
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103, T-AHR 216.

T-AHR 227 Estimating and Contracts 3 6°

Cost estimation, plans and specifications, equipment take-off, materials labor take-off, sub-contractors' estimates, overhead cost, and bid and contract pro
Prerequisites: T-AHR 203, T-DFT 226.

T-AHR 230 Seminar and Research 1 4

Successful completion of the Air-Conditioning and Refrigeration Technology cu lum is climaxed by the student conducting a research project and writing a re this project. The student, through consultation with the instructors, will ch individual project that will, when feasible, involve an actual installation. F conferences with instructor will guide the student in the progress of research the preparation of the report.
Prerequisites: T-AHR 201, T-AHR 216, T-AHR 203.

AHR 1101 Automotive Air Conditioning 2 3

General introduction to the principles of refrigeration; study of the assembl components and connections necessary in the mechanisms, the methods of op

ntrol; proper handling of refrigerants in charging the system.
uisite: PHY 1102.

121 Principles of Refrigeration 5 6 7

ntroduction to the principles of refrigeration, terminology, the use and care of nd equipment, and the identification and the function of the component parts of m. Other topics to be included will be the basic laws of refrigeration; characteristics mparison of the various refrigerants; the use and construction of valves, fittings, sic controls. Practical work includes tube bending, flaring and soldering. Standard ures and safety measures are stressed in the use of special refrigeration service ent and the handling of refrigerants.
uisite: None.

22 Domestic and Commercial Refrigeration 3 9 6

estic refrigeration servicing of conventional, hermetic, and absorption systems. t care, controls, and system maintenance in domestic refrigerators, freezers, and v air conditioning units is stressed. Commercial refrigeration servicing of display s, walk-in cooler and freezer units, and mobile refrigeration systems is studied. e of manufacturers' catalogs in sizing and matching system components and a f controls, refrigerants, servicing methods is made. The American Standard Code for Refrigeration is studied and its principles practiced.
uisite: AHR 1121.

23 Principles of Air Conditioning 5 6 7

: includes the selection of various heating, cooling and ventilating systems, ation and control of factors affecting air cleaning, movement, temperature, and y. Use is made of psychrometric charts in determining needs to produce n temperature and humidity control. Commercial air conditioning equipment bled and tested. Practical sizing and balancing of ductwork is performed as

isite: AHR 1122.

24 Air Conditioning and Refrigeration Servicing

3 6 5

asis is placed on the installation, maintenance, and servicing of equipment the cleaning, changing, humidification and temperature control of air in an litioned space. Installation of various ducts and lines needed to connect various ents is made. Shop work involves burner operation, controls, testing and adjusting conditioning and refrigeration equipment, and location and correction of ent failure.
isite: AHR 1123.

26 All Year Comfort Systems 3 6 5

ary equipment used in conjunction with refrigeration systems to provide both and cooling for "all year" comfort will be studied and set up in the laboratory. l will be oil fired systems, gas fired systems, water circulating systems, and resistance systems. Installation of heat pumps will be studied along with techniques. Reversing valves, special types of thermostatic expansion valves,

systems of de-icing coils, and electric wiring and controls are included in th
Prerequisites: AHR 1123, AHR 1128.

AHR 1128 Automatic Controls 3 6

Types of automatic controls and their function in air conditioning systems. In in the course will be electric and pneumatic controls for domestic and commerical and heating; zone controls, unit heater and ventilator controls, commerc systems controls, commercial refrigeration controls, and radiant panel controls.
Prerequisites: ELC 1102, AHR 1122.

AHR 1130 Duct Layout and Fabrication 2 2

Work in drafting room with instruments developing patterns on paper for duct fittings. Proper layout procedures are followed in work on plates including and radius elbows, offsets, transitions, "y" branches and square to round fittin

ART (ART)

T-ART 105 History of Art 3 0

A study of the origins and development of art forms from the beginning contemporary. Lecture discussion documented with paintings, sculpture, repro and films.
Prerequisite: None.

T-ART 106S Art History 4 0

A survey and analysis of major trends in architecture, painting, and scul Western civilization. Pre-historic, Egyptian, ancient Near East, Aegean, Greek, E Roman, early Christian, Byzantine, Islamic, early medieval, Romanesque, and art.

T-ART 107S Art History 4 0

A continuation of T-ART 106S. Renaissance, Mannerist, Baroque, Ne Romantic, Realist, Impressionest, Post-impressionest, Expressionest, cubist, non- art, and twentieth century art are covered.

AUTOMOTIVE (AUT)

AUT 1121 Braking Systems 3 3

A complete study of various braking systems employed on automobiles and lig truck. Emphasis is placed on how they operate, proper adjustment, and
Prerequisite: PHY 1102.

AUT 1123 Automatic Chassis and Suspension Systems
3 9

Principles and functions of the components of automotive chassis. Prac instruction in adjusting and repairing of suspension, and steering systems. Un

l will be shock absorbers, springs, steering systems, steering linkage, and front d alignment.
uisite: PME 1102.

124 Automotive Power Train Systems 3 9 6

ciples and functions of automotive power train systems: clutches, transmission orque converters, drive shaft assemblies, rear axles and differentials. Identification bles, servicing, and repair.
uisites: PHY 1102, AUT 1123.

125 Automotive Servicing 3 9 6

hasis is on the shop procedures necessary in determining the nature of troubles ed in the various component systems of the automobile. Troubleshooting of tive systems, providing a full range of experiences in testing, adjusting, repairing lacing.
isites: AUT 1123, AUT 1121, AHR 1101.

BUSINESS ADMINISTRATION (BUS)

101 Introduction to Business 5 0 5

rvey of the business world with particular attention devoted to the structure of ious types of business organization, methods of financing, internal organization, nagement.
isite: None.

102 Typewriting 2 3° 3

duction to the touch typewriting system with emphasis on correct techniques, of the keyboard, simple business correspondence, tabulation, and manuscripts.
isite: None.

103 Typewriting 2 3° 3

ction emphasizes the development of speed and accuracy with further mastery ct typewriting techniques. These skills and techniques are applied in tabulation, ript, correspondence, and business forms.
isite: T-BUS 102 or the equivalent.

104 Typewriting 2 3° 3

asis on production typing problems and speed building. Attention to the ment of the student's ability to function as an expert typist, producing mailable The production units are tabulation, manuscript, correspondence, and business

isite: T-BUS 103 or the equivalent.

105S Typing Office Production 2 3 3

rse to train the student who possesses basic skills to produce with efficiency ten work that would be acceptable in the most exacting business offices. The

student learns to think independently regarding style and method.
Prerequisite: Permission of Department Head.

T-BUS 106 Shorthand 3 2

A beginning course in the theory and practice of reading, and writing sh
Emphasis on phonetics, penmanship, word families, brief forms, and phrases.
Prerequisite: None.

T-BUS 107 Shorthand 3 2

Continued study of theory with greater emphasis on dictation and ele
transcription.
Prerequisite: T-BUS 106 or the equivalent.

T-BUS 108 Shorthand 3 2

Theory and speed building. Introduction to office style dictation. Empl
development of speed in dictation and accuracy in transcription.
Prerequisite: T-BUS 107.

T-BUS 110 Office Machines 2 2

A general survey of the business and office machines. Students will receive
in techniques, processes, operation and application of the ten-key adding m
full keyboard adding machines, and calculator.
Prerequisite: None.

T-BUS 112 Filing 3 0

Fundamentals of indexing and filing, combining theory and practice by th
cards, miniature letters, filing boxes and guides. Alphabetic, Geographic, Subj
numeric filing.
Prerequisite: None.

T-BUS 115 Business Law 3 0

A general course designed to acquaint the student with certain fundamen
principles of business law, including contracts, negotiable instruments, and
Prerequisite: None.

T-BUS 116 Business Law 3 0

Includes the study of laws pertaining to bailments, sales, risk-bearing, part
corporation, mortgages, and property rights.
Prerequisite: T-BUS 115.

T-BUS 120 Accounting 5 2

Principles, techniques and tools of accounting, for understanding of the m
of accounting. Collecting, summarizing, analyzing, and reporting informatio
service and mercantile enterprises, to include practical application of the p
learned.
Prerequisite: T-MAT 110 or T-MAT 101.

121 Accounting 5 2 6

ership and corporation accounting including a study of payrolls, federal and xes. Emphasis is placed on the recording, summarizing and interpreting data iagement control rather than on bookkeeping skills. Accounting services are as they contribute to the recognition and solution of management problems. isite: T-BUS 120.

122S Accounting 5 0 5

oration accounting including study of issuing stock, subscriptions to stock and tion of stock. Long-term obligations and investments of corporations. Accounting artments and branches. Study of manufacturing operations and process cost

isites: T-BUS 121

123 Business Finance 3 0 3

icing of business units, as individuals, partnerships, corporations, and trusts. A study is made of short-term, long-term, and consumer financing. isite: T-ECO 104

124 Business Finance 3 0 3

cing, federal, state, and local government and the ensuing effects upon the /. Factors affecting supply of funds, monetary and credit policies. isite: T-BUS 123.

182M Anatomy 3 0 3

ic study of the general plan of the body and the nine systems, including common and health deviations. site: none

183M Terminology and Vocabulary 3 0 3

velop an understanding of the terminology and vocabulary appropriate to the f study, as it is used in medical site: None.

83T Terminology and Vocabulary 3 0 3

velop an understanding of the terminology and vocabulary appropriate to the f study, as it is used in business, technical, and professional offices. site: None.

05 Advanced Typewriting 2 3° 3

isis is placed on the development of individual production rates. The student e techniques needed in planning and in typing projects that closely approximate appropriate to the field of study. These projects include review of letter iethods of duplication, statistical tabulation, and the typing of reports, manu- nd legal documents. site: T-BUS 104.

T-BUS 206M Dictation and Transcription 3 2

Develops the skill of taking dictation and of transcribing at the typewriter m appropriate to the course of study, which includes a review of the theory dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: T-BUS 108.

T-BUS 206T Dictation and Transcription 3 2

Develops the skill of taking dictation and of transcribing at the typewriter m appropriate to the course of study, which includes a review of the theory dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: T-BUS 108.

T-BUS 207M Dictation and Transcription 3 2

Covering materials appropriate to the course of study, the student devel accuracy, speed, and vocabulary that will enable her to meet the stenographic ments of business and professional offices.
Prerequisite: T-BUS 206M.

T-BUS 207T Dictation and Transcription 3 2

Covering materials appropriate to the course of study, the student devel accuracy, speed, and vocabulary that will enable her to meet the stenographic ments of business and professional offices.
Prerequisite: T-BUS 206.

T-BUS 208M Dictation and Transcription 3 2

Principally a speed building course, covering materials appropriate to the c study, with emphasis on speed as well as accuracy.
Prerequisite: T-BUS 207.

T-BUS 208T Dictation and Transcription 3 2

Principally a speed building course, covering materials appropriate to the c study, with emphasis on speed as well as accuracy.
Prerequisite: T-BUS 207.

T-BUS 211 Office Machines 2 2

Instructions in the operation of the bookkeeping-accounting machines, du equipment, and the dictating and transcribing machines.
Prerequisite: T-BUS 110.

T-BUS 214 Secretarial Procedures 3 2

Designed to acquaint the student with the responsibilities encountered by a during the work day. These include the following: receptionist duties, hanc mail, telephone techniques, travel information, telegrams, office records, p of supplies, office organization, and insurance claims.
Prerequisite: None.

215M Office Application 6 0 6

ng the sixth quarter only, students are assigned to work in a medical office for
rs per week. The objective is to provide actual work experience for secretarial
s and an opportunity for the practical application of the skills and knowledge
sly learned, according to the course of study.
isites: T-BUS 214, T-BUS 205, T-BUS 208, T-BUS 211.

215T Office Application 6 0 6

ng the sixth quarter only, students are assigned to work in a business, technical,
essional office for six hours per week. The objective is to provide actual work
nce for secretarial students and an opportunity for the practical application of
lls and knowledge previously learned, according to the course of study.
isites: T-BUS 214, T-BUS 205, T-BUS 208, T-BUS 211.

217 Business Law 3 0 3

udy of the powers, policies, methods, and procedures used by the various
, state and local administrative agencies in promoting and regulating business
ises. It includes a consideration of the constitutional and statutory limitations
e bodies and judicial review of administrative action.
isite: T-BUS 116.

219 Credit Procedures and Problems 3 0 3

iples and practices in the extension of credit; collection procedures; laws
ing to credit extension and collection are included.
isite: T-BUS 120.

225 Cost Accounting 3 2 4

e and purposes of cost accounting; accounting for direct labor, materials, and
burden; job cost, and standard cost principles and procedures; selling and
tion cost; budgets, and executive use of cost figures.
isite: T-BUS 121.

6S Payroll Records and Accounting 3 0 3

dy in the preparation of the payroll which includes: (1) Figuring basic wages,
ucting for taxes (FICA, FUTA, and Federal Income Taxes), and (3) Making
y journal entries, as well as other problems encountered in preparing the

isite: T-BUS 121

229 Taxes 3 2 4

cation of federal and state taxes to various businesses and business conditions.
of the following taxes: income, payroll, intangible, capital gain, sales and use,
nd inheritance.
site: T-BUS 121.

232 Sales Development 3 0 3

ly of retail, wholesale and specialty selling. Emphasis is placed upon mastering

and applying the fundamentals of selling. Preparation for and execution
demonstrations required.
Prerequisite: None.

T-BUS 233 Personnel Management 3 0

Principles of organization and management of personnel, procurement, pla
training, performance checking, supervision, remuneration, labor relations,
benefits and security.
Prerequisite: None.

T-BUS 235 Business Management 3 0

Principles of business management including overview of major functions of
ment, such as planning, staffing, controlling, directing, and financing. Clarific
the decision-making function versus the operating function. Role of manager
business—qualifications and requirements.
Prerequisite: None.

T-BUS 237 Wholesaling 3 0

The development of wholesaling; present day trends in the United States.
of the functions of wholesaling.
Prerequisite: None.

T-BUS 239 Marketing 5 0

A general survey of the field of marketing, with a detailed study of the fu
policies, and institutions involved in the marketing process.
Prerequisite: ECO 104

T-BUS 243 Advertising 3 2

The role of advertising in a free economy and its place in the media of ma
munications. A study of advertising appeals; product and market research; sele
media; means of tesing effectiveness of advertising. Theory and practice of
advertising copy for various media.
Prerequisite: None.

T-BUS 245 Retailing 3 0

A study of the role of retailing in the economy including development of
retail structure, functions performed, principles governing effective operati
managerial problems resulting from current economics and social trends.
Prerequisite: None.

T-BUS 247 Business Insurance 3 0

A presentation of the basic principles of risk insurance and their application. A
of the various types of insurance is included.
Prerequisite: None.

T-BUS 255 Interpreting Accounting Records 3 0

Designed to aid the student in developing a "use understanding" of ac
records, reports and financial statements. Interpretation, analysis, and utiliz

ing statements.
isite: T-BUS 121.

266 Budget and Record Keeping 3 0 3

basic principles, methods, and procedures for preparation and operation of
. Special attention is given to the involvement of individual departments and the
ey play. Emphasis on the necessity for accurate record keeping in order to
e the effectiveness of budget planning.
isite: T-BUS 121.

271 Office Management 3 0 3

nts the fundamental principles of office management. Emphasis on the role of
nanagement including its functions, office automation, planning, controlling,
ng and actuating office problems.
isite: None.

272 Principles of Supervision 3 0 3

luces the basic responsibilities and duties of the supervisor and
tionship to superiors, subordinates, and associates. Emphasis on securing an
work force and the role of the supervisor. Methods of supervision are stressed.
isite: None.

284M Terminology and Vocabulary 3 0 3

er emphasis on an understanding of the terminology and vocabulary appropriate
ourse of study, as it is used in medical offices.
isite: T-BUS 183M.

300S Current Trends in Business 2 4 4

ned to aid the student to become more aware of current trends in the business
rough reading, reporting, and informal discussions.
site: Advance standing in Business Administration

2 Typewriting 2 3 3

ginning course in touch typewriting, with emphasis on correct techniques,
of the keyboard, simple business correspondence, and tabulation.
site: None.

3 Small Business Operations 3 0 3

roduction to the business world, problems of small business operation, basic
law, business forms and records, financial problems, ordering and inventorying,
f equipment and offices, methods of improving business, and employer-
relations.
ite: None.

5 Industrial Organizations 3 0 3

ds, techniques, and practices of modern management in planning, organizing
rolling operations of a manufacturing concern. Introduction to the competitive

system and the factors constituting product cost.
Prerequisite: None.

CHEMISTRY (CHM)

T-CHM 101 Chemistry 4 2

Study of the physical and chemical properties of substances, chemical elements, compounds, gases, chemical combinations; weights and measurement of metals; acids, bases, salts, solvents, solutions, and emulsions. In addition, carbohydrates; electrochemistry, electrolytes, and electrolysis in their appli chemistry to industry.
Prerequisite: T-MAT 101.

T-CHM 102 Chemistry 4 2

General course in inorganic chemistry. Properties of acids, salts, bases, and Chemical and physical properties of selected inorganic elements are studied Laboratory work will consist of various inorganic tests and experiments.
Prerequisite: T-CHM 101.

T-CHM 111 General Chemistry 4 3°

An introductory chemistry course involving chemical terminology, atomic properties of some elements, and the function of the periodic table. Propertie pounds and mixtures are studied as are types of chemical reactions. Labora consists of various inorganic reactions and preparations.
Prerequisite: None.

T-CHM 112 General Chemistry 4 3

A study of the properties of elements not covered in T-CHM 101 and greater depth of the combining properties of the elements including equivaler Laboratory work includes chemical reactions and an investigation of prc solutions.
Prerequisite: T-CHM 111.

T-CHM 113S General Chemistry III 4 3

A continuation of T-CHM 112. The different families of elements are detail, with emphasis on their sources, refining processes and chemical Laboratory work will emphasize the properties of the different families of Prerequisite T-CHM 112.

T-CHM 121 Quantitative Chemical Analysis 3 6°

Emphasis is placed on developing laboratory techniques employed in the analysis of acids and bases. The students will become thoroughly familia principles and procedures of neutralization titration. Classroom work will the stoichiometric calculations involved in interpreting the results of analysis. work will consist of percentage analysis of selected substances.
Prerequisite: T-CHM 113.

222 Quantitative Chemical Analysis 2 9 5

nore complex types of quantitative analysis. Special emphasis on the theory tion-reduction and gravimetric analysis. Instrumental analysis is introduced and odern analytical devices is stressed. The student will become familiar with the s of redox reactions, ionization constants and pH of solutions. Stress is placed stoichiometric calculations of quantitative chemical analysis. Classroom work ents quantitative determinations in the laboratory.
site: T-CHM 121.

227 Physical Chemistry 3 2 4

c theory, states of matter, chemical thermodynamics, molecular properties of , equilibria, phase role, electrochemistry, kinetics, surface chemistry, and emistry constitute major areas of study.
site: T-CHM 121.

231 Organic Chemistry 3 6° 5

nclature, structure, preparation, properties, and reactions of aliphatic organic ds. Laboratory work emphasizes techniques.
site: T-CHM 222.

232 Organic Chemistry 3 6° 5

nomenclature, structure, preparation, properties, and reactions of aromatic compounds. Laboratory work emphasizes techniques and involves preparation lysis of selected organic compounds.
sites: T-CHM 231.

233S Organic Chemistry III 3 6 5

tinuation of T-CHM 232. Polymers and other macro molecules will be studied l with some emphasis on synthetic textile fibers. Laboratory work will be around Polymers.
site T-CHM 232.

241 Industrial Chemical Analysis 3 9° 6

dustrial laboratory situation is simulated. Principles and techniques learned ous quarters are utilized in solution of problems common to local industry. It the responsibility of the instructor to determine and submit in outline form a of suitable scope and sequence of topics which he will work out from con- with his local advisory committee, representing the industry. This program approved by the administration and accepted by the appropriate State-level .
sites: T-CHM 222.

242 Industrial Chemical Analysis 3 12° 7

dustrial laboratory situation is maintained and the emphasis on instrumentation ded. Problems of industrial quality control. Plant visitations.
site: T-CHM 241.

T-CHM 250S Qualitative Inorganic Analysis 2 4

General principles involved in separation and identification of the more cation and anions. Laboratory practice in identifying the ions in a variety of u
Prerequisite: T-CHM 112.

COMMERCIAL ART (CAT)

T-CAT 101 Advertising Principles 3 0

A comprehensive survey of the history and development of advertising inc discussion of its economic and social values. An introduction to advertising m current publications in the field.
Prerequisite: None.

T-CAT 105 Life Study 2 3*

A study of the body structure with emphasis on the skeletal and muscular movement and the aging process. Graphical interpretation and response to liv with emphasis on proportioning, masses and movement.
Prerequisite: None.

T-CAT 106 Life Study 0 6

Graphical interpretation and response to the live model covering topics proportioning, the aging process, character, expression and draping the mo course will deal with building of the figure and such ingredients.

T-CAT 116 Photography 2 6*

An introduction to the field of photography, photographic equipment and A study of the fundamental techniques of the camera and its expressive possil relation to the field of design and visual communications. Assigned camera darkroom procedures and equipment.
Prerequisite: None.

T-CAT 121 Commercial Art & Advertising Design
3 9*

An introduction to drawing and basic design fundamentals and principles. is placed on line, two-and three-dimensional shapes, letter indication, s perspective, light and shade, equipment and materials of the art and design p
Prerequisite: None.

T-CAT 122 Commercial Art & Advertising Design
3 9*

Advanced material in drawing, basic design, lettering, equipment and Emphasis placed on two and three-dimensional form, perspective, sketching, r finished lettering. Laboratory will consist of assigned graphical problems with and discussion by class participation.
Prerequisite: T-CAT 121.

123 Commercial Art & Advertising Design 3 9* 6

luction to layout and design for printing. Mechanics of layout, properties of d basic reproductive processes. Laboratory exercises will consist of preparation rehensive art form for presentation on magazine covers, trademarks, book textile designs, furniture designs, two-and three-dimensional display figures. l graphical problems with critique and discussion by class members.
isites: T-CAT 122.

205 Advertising Copywriting 3 0 3

dy of the techniques used in creating effective advertising copy for various media; purposes and duties of the copywriter and legal problems encountered writing. Theory and practice will be given in writing copy for the various cluding retail and fashion copy, mail order, direct mail, business publications, d television.
isite: T-ENG 102.

212 Advertising Illustration 1 3* 2

troduction to advertising illustration through problems in shape, space, and alysis. Laboratory exercises will explore the use of various media.
isite: T-CAT 121.

213 Advertising Illustration 1 3 2

nced work and assigned problems in advertising illustration. The student is explore a variety of mediums.
isite: T-CAT 212.

214 Advertising Illustration 1 3* 2

ned problems in advanced illustration. Emphasis is placed on originality and diness of the student to explore assigned graphical tasks and problems.
isite: T-CAT 213.

217 Photography 2 6* 4

nced photographic techniques and materials. Participation in studio and ory procedures illustrating the various applications of photography in visual nications.
isite: T-CAT 116.

224 Commercial Art & Advertising Design 3 9* 6

ntroduction to cartooning, intermediate layout and design techniques for . Laboratory assigned graphical problems will cover such topics as color on, halftones, and materials for the development of posters, show cards, banners, ttered documents, brochures and folders.
isite: T-CAT 123.

225 Commercial Art & Advertising Design 3 9* 6

nced problems in layout and design techniques for printing, illustration,

cartooning, animation, display design and lettering. Laboratory and graphic dealing with magazine and book illustrations, the fashion figure, outdoor sign displays and exhibits for business and industry.
Prerequisite: T-CAT 224.

T-CAT 226 Commercial Art & Advertising Design 3 9°

A course providing simulated professional working conditions utilizing a layout and design techniques for printing. Each student will explore a v problems, and present his solutions for general class critique and discussi course will climax with the review and presentation of the student's i portfolio of professional work.
Prerequisite: T-CAT 225.

T-CAT 231 Painting with Polymers 2 6

An introduction to the medium: a study of the techniques used in pain illustration with the relatively new acrylic polymer emulsions. Students m projects or complete assigned projects.
Prerequisite: None.

T-CAT 235 Advertising Art Direction 5 0

A study of the techniques used in creating effective advertising for various media. The physical consideration of the advertisement such as size, positio frequency of insertion, layout, coupons and inquiries. Analysis of techniques in national, retail, mail order, industrial and professional advertising with cons given to budgetary practices.
Prerequisites: T-CAT 101,

T-CAT 239 Selective Media 2 3

Designed to give students an opportunity to work in a variety of media not studied.

The media selected to meet the needs and interests of the class will includ ture, ceramics, mono-prints, silk-screen printing, lithography, metal enamel painting with oils, polymers, and acrylics.
Prerequisite: None

T-CAT 240 Metal Sculpturing 1 3

An introduction to metal as a media of expression in time and space. The of welding, brazing, and soldering will be taught.
Prerequisite: CAT 121.

DENTAL (DEN)

DEN 1001 Introduction to Dental Assisting 2 0

An introduction to the history of dental assisting, the modern role of th assistant in practice and in relation to other members of the dental health t

onal and ethical requirements for safe and effective practice.
isite: None.

02 Dental Materials 2 9 5

ification of dental materials, characteristics of each, evaluation of quality, and
es and procedures related to manipulation and storage of various dental
s.
isite: None.

03 Preclinical Sciences I 3 3 4

information from bacteriology, anatomy and physiology, and oral and dental
as related to dental science and the practice of dental assisting. Designed as
nits which may be scheduled for either concurrent or sequential teaching.
isite: None.

04 Preclinical Sciences II 4 0 4

mental information from oral pathology, pharmacology, nutrition, and common
cies as related to the role of the dental assistant. Designed in four units to
lexibility in scheduling.
site: DEN 1003.

05 Dental Accounting 3 2 4

mentals of accounting as applied to dental office procedures. Practice in
on of principles to various forms commonly used in the dental office.
site: None.

06 Clinical Procedures I 5 9 8

ples and procedures related to radiology, dental instruments and equipment,
irside techniques of dental assisting. Designed in three units for flexibility in
ng.
site: DEN 1002.

07 Clinical Procedures II 5 6 7

of the dental assistant in various dental specialties, such as endodontics,
tics, orthodontics, prosthodontics, and oral surgery.
site: DEN 1006.

08 Dental Office Management 4 3 5

les and procedures related to management of the dental office, including
nce of inventories, ordering of supplies, patient records, financial records,
ppointments and establishing favorable patient relations.
site: DEN 1005.

09 Dental Office Practice I 0 12 4

uction to practice in the dental office or dental clinic, emphasis is on the
e dental assistant in the operatory in a variety of dental procedures.
site: DEN 1008.

DEN 1010 Dental Office Practice II 0 30

Practice in the dental office or dental clinic; rotation of assignments to e
experience in office management, the dental laboratory, and the operatory, Em
chairside assisting in a variety of clinical procedures.
Prerequisite: DEN 1009.

DEN 1011 Dental Assistant Seminar 1 0

Study of personal responsibilities as a practitioner, including employee-
relations, opportunities for continued development as a person and as a healt
and importance of organization membership.
Prerequisite: None.

DESIGN (DES)

T-DES 105 Technical Sketching 0 6°

Basic skills in freehand sketching. Experience in the techniques of two di
and orthographic sketching. Mechanical and natural objects, including anat
Prerequisite: None.

T-DES 115 Art Appreciation 4 0

To equip the student with a knowledge of why man has developed art.
basis for study of design, techniques, and use of media in past art to relate its
on art today and to develop an appreciation for art: design, color, etc.
Prerequisite: None.

T-DES 150 Technical Illustration 3 9°

Introduction to Technical Illustration. A study of isometric theory dealing
tools and equipment.
Prerequisite: T-DFT 102.

T-DES 251 Technical Illustration II 3 6°

A continuation of the study of basic technical illustration theory, tools and e
Various types of templates, layouts and projections.
Prerequisite: T-DES 150.

T-DES 252 Technical Illustration III 3 6°

A development of the techniques necessary to utilize the materials and eq
the illustrator. A study of axonometric theory and use in illustrations. Project
from previous courses will be used as problem assignments.
Prerequisite: T-DES 251.

T-DES 253 Technical Illustration IV 3 9°

A study of the various mechanical devices used to produce illustrations an
involved in using these materials. A time and materials record will be kep
student on each project. As much as possible industrial type projects will b
Prerequisite: T-DES 252

256 Seminar Technical Illustration 3 3* — 4

ıar to consist of field trips, guest speakers, and the utilization of former class
to develop a presentation portfolio.
site: T-DES 252.

260 Technical Rendering 1 3* 2

ops skills and techniques in rendering. Stresses technical and presentation art,
ıs reproducing such art.
sites: T-CAT 122.

262 Technical Publications 1 3* 2

ly of methods of producing diagrams and handbook illustrations for technical
ions.
sites: T-DES 251.

280 Special Projects 1 6* 3

les opportunity for special learning experience in the technical illustration field
udent, according to his area of interest. May include exposure to model building,
techniques, audio-visuals, reproduction media, and other fields utilized within
ing departments for the presentation of new visual ideas.
sites: T-DES 251.

DRAFTING (DFT)

.01 Technical Drafting 2 4 3

eld of drafting is introduced as the student begins study of drawing principles
tices for print reading and describing objects in the graphic language. Basic
d techniques of drafting included are: use of drafting equipment, lettering,
orthographic and pictorial sketching, geometric construction, orthographic
nt drawing of principal views, and standards and practices of dimensioning.
ciples of isometric, oblique, and perspective are introduced.
site: None.

02 Technical Drafting 2 4 3

pplication of orthographic projection principles to the more complex drafting
, primary and secondary auxiliary views, simple and successive revolutions,
ions and conventions will be studied. Most important is the introduction of
hical analysis of space problems. Problems of practical design elements
points, lins, planes, and a combination of these elements shall be studied.
ning practices for "details" and "working drawings," approved by the
Standards Association will also be included. Introduction is given to inter-
and developments of various types of geometrical objects.
site: T-DFT 101.

03 Technical Drafting 1 6* 3

ction and developments and their practical solutions. Where applicable,

model solutions accompany the problems. The various techniques employed to
and render isometric and oblique drawings, isometric, dimetric and trimetric pr
will be included.
Prerequisite: T-DFT 102.

T-DFT 201 Technical Drafting 2 6°

Applications and constructions of charts, graphs, and nomographs in enginee
technical data. Screw threads, springs, keys, rivets, piping, and welding
methods of representing and specifying will be covered. Basic mechanisms o
transfer, gears and cams, will be studied and drawn with emphasis on me
specifying, calculating, dimensions, and delineating.
Prerequisite: T-DFT 103.

T-DFT 204 Descriptive Geometry 2 4

Graphic analysis of space problems involving points, lines, planes, connec
a combination of these. Practical design problems will be stressed with
verification where applicable. Visualization shall be stressed on every
Prerequisite: T-DFT 102.

T-DFT 205 Design Drafting I 2 6°

Basic design is introduced in the study of motion transfer mechanisms as th
to power trains. Principles of design sketching, design drawing, layout
detailing from layouts, production drawings and simplified drafting practices
areas of study. Types and methods of specifying materials and workmanshi
integral part of the course.
Prerequisites: T-DFT 204, T-MAT 102, T-PHY 102.

T-DFT 206 Design Drafting II 2 6°

Research to solve a problem in design by consulting various manuals, pe
and through laboratory experiments. A written technical report, preliminar
sketches, layout drawings, detail drawings, assembly and sub-assembly
pictorial drawings, exploded pictorial assembly, patent drawings and specific
required as a part of the problem.
Prerequisites: T-DFT 205, T-DFT 210.

T-DFT 211 Mechanisms 3 2

Mathematical and drafting room solutions of problems involving the pri
machine elements. Study of motions of linkage, velocities and acceleration
within a link mechanism; layout methods for designing cams, belts, pulleys,
gear trains.
Prerequisites: T-DFT 201 & 204, T-MAT 103, T-PHY 106.

T-DFT 212 Jig and Fixture Design 2 6°

Commercial standards, principles, practices and tools of jig and fixtur
Individual project and design work to acquaint students with the types of
fixtures and their design.
Prerequisites: T-DFT 205, T-DFT 211.

226 Air-Conditioning Systems Drawing 0 6* 2

ing of air-conditioning systems and study of related architectural and structural
s. Sheet metal intersections and developments and types of duct installation.
litioning and refrigeration layouts, diagrams, and schematics.
isites: T-DFT 102, T-AHR 103, T-AHR 201, T-AHR 216.

01 Schematics & Diagrams: Power Mechanics
0 3 1

retation and reading of blueprints. Development of ability to read and interpret
ts, charts, instruction and service manuals, and wiring diagrams. Information
basic principles of lines, views, dimensioning procedures, and notes.
isite: None.

04 Blueprint Reading: Mechanical 0 3 1

retation and reading of blueprints. Information on the basic principles of the
t; lines, views, dimensioning procedures and notes.
isite: None.

05 Blueprint Reading: Mechanical 0 3 1

er practice in interpretation of blueprints as they are used in industry; study of
pplied by industry; making plans of operations; introduction to drafting room
res; sketching as a means of passing on ideas, information and processes.
isite: DFT 1104.

06 Blueprint Reading: Mechanical 0 3 1

nced blueprint reading and sketching as related to detail and assembly
s used in machine shops. The interpretation of drawings of complex parts and
isms for features of fabrication, construction and assembly.
isite: DFT 1105.

16 Blueprint Reading: Air Conditioning 1 3 2

cialized course in drafting for the heating, air conditioning and refrigeration
Emphasis will be placed on reading of blueprints that are common to the
lueprints of mechanical components, assembly drawings, wiring diagrams and
ics, floor plans, heating system plans including duct and equipment layout
nd shop sketches. The student will make tracings of floor plans and layout
litioning systems.
isite: DFT 1122.

21 Drafting 3 12 7

troduction to drafting and the study of drafting practices. Instruction is given in
ction, use and care of instruments, singlestroke lettering, applied geometry,
d sketching consisting of orthographic and pictorial drawings. Orthographic
on, reading and instrument drawing of principal views, single auxiliary views
y), and double (oblique) auxiliary views will be emphasized. Dimensioning and
actices will be studied with reference to the American Standards Association
s. Methods of reproducing drawings will be included at the appropriate time.
isite: None.

DFT 1122 Drafting 3 6

The trainee will study simple and successive revolutions and their applic
practical problems. Sections and conventions will be studied and both de
assembly sections will be drawn. Intersections and developments will be stu
relating the drawing to the sheet metal trades. Models of the assigned drawing
made from construction paper, cardboard, or similar materials as a proof of the
to the problems drawn.

Methods of drawing and projecting axonometric, oblique, and perspective
will be studied with emphasis on the practical applications of pictorial d
Various methods of shading will be introduced and dimensioning and secti
oblique and axonometric pictorials will be done.
Prerequisite: DFT 1121.

DFT 1125 Descriptive Geometry 2 3

Graphical analysis of space problems. The problems deal with practical
elements involving points, lines, planes, connectors, and a combination o
Included are problems dealing with solid geometry theorems. Where applicab
graphical solution shall be accompanied by the analytical solution.
Prerequisite: DFT 1121.

DFT 1131 Mechanical Drafting 3 12

An introduction to mechanical drafting beginning with problems concerning
and limit dimensioning. Methods of fastening materials, and fasteners: keys
springs, and welding. Symbols will be studied and drawings will be made i
these items. Principles of design will be introduced with the study of basic mec
of motion transfer; gears, cams, power trains, pulleys, belting and methods of sp
and calculating dimensions will be studied. Drawings will be made involvi
mechanisms.
Prerequisite: DFT 1122.

DFT 1132 Mechanical Drafting 3 12

Principles of design sketching, design drawings, layout drafting, detaili
layout drawings, production drawings and simplified drafting practices constitu
of study. Forging and casting drawings will be made from layouts. Specificatio
list and bill of materials are emphasized in this course. The student will de
complete set of working drawings of a tool, jig, fixture or simple machine a
principles of design, handbook and manual usage.
Prerequisite: DFT 1131.

ECONOMICS (ECO)

T-ECO 102 Economics 3 0

The fundamental principles of economics including the institutions and
by which people gain a livelihood. Included is a study of the laws of sup
demand and the principles bearing upon production, exchange, distributio
consumption both in relation to the individual enterprise and to society a
Prerequisite: None.

104 Economics 3 0 3

er depth in principles of economics, including a penetration into the composition ing of national output, distribution of income, international trade and finance, rent economic problems.
isite: T-ECO 102.

106 Economics of Transportation 3 0 3

ints the student with the economic aspects of transportation. Complete dis- from the earliest form of basic transportation to our present complex system portation. In addition to the historical approach, consideration is given to omic factors involved in plant location and principles involved in present-day nents of transportation.
isite: T-ECO 102.

108 Consumer Economics 3 0 3

ned to help the student use his resources of time, energy, and money to get t out of life. It gives the student an opportunity to build useful skills in managing his finances, increasing his resources, and to understand better the in which he lives.
isite: None.

ELECTRICAL (ELC)

101 Fundamentals of Electricity 4 4 or 6 6

ntary principles of electricity including: basic electric units, Ohms law, ffs law, network theorems, magnetics, basic electrical measuring instruments, ice, capacitance, sine wave analysis, and non-resonant resistive, inductive acitive networks.
isite: None.

102 Fundamentals of Electricity 4 4 or 6 6

and parallel resonant-circuit analysis, resonant and non-resonant transformer basic diode power supply analysis, introduction to non-linear resistive control and introduction to electro-mechanical devices.
isite: T-ELC 101.

201 Electrical Machinery 3 0 3

urse in the basic understanding and application of electricity to modern l machinery. Included is a study of direct current motors, motor controls and ng devices, transformers, and the industrial applications of this equipment.
isite: T-PHY 103.

210 Rotating Devices 2 2 3

luction to electrical machinery. AC and DC motor and generator principles, s and servomechanism, alternators and dynamotors, Ward-Leonard and am- control systems will be analyzed. A general knowledge of the theory, operation,

and maintenance of these devices and systems will be stressed.
Prerequisites: T-ELC 102, T-PHY 102.

ELC 1102 Applied Electricity 2 3

The use and care of test instruments and equipment used in servicing
apparatus for air conditioning and refrigeration installations. Electrical princi
procedures for trouble-shooting of the various electrical devices used in air cond
heating, and refrigeration equipment. Included will be transformers, various
motors and starting devices, switches, electrical heating devices and wiring.
Prerequisite: PHY 1101.

ELC 1112 Direct and Alternating Current 5 15

A study of the structure of matter and the electron theory, the relationship
voltage, current and resistance in series, parallel and series-parallel circuits.
of direct current circuits by Ohm's law and Kirchhoff's law; sources of direct
potentials. Fundamental concepts of alternating current flow; a study of re
impedance, phase angle, power and resonance and alternating current circuit
Prerequisite: None.

ELECTRONIC DATA PROCESSING (EDP)

T-EDP 101 Functional Wiring Principles 2 3

Principles of wiring necessary to perform basic machine functions of printing,
comparing and selection. A series of laboratory experiments support the th
aspects of this course.
Prerequisite: None.

T-EDP 102 Functional Wiring Principles 2 3*

Additional study of the fundamental principles of wiring necessary to perfor
machine functions of printing, punching, comparing and selection with emphasis
accounting machine. A series of laboratory experiments support the theoretical
of this course.
Prerequisite: T-EDP 101.

EDP 103S Concepts of Data Processing 4 0

A survey of the manual, automatic, and electronic methods of processing
applied to business systems.

T-EDP 104 Introduction to Data Processing Systems 3 2

Fundamental concepts and operational principles of data processing systems
aid in developing a basic knowledge of computers, prerequisite to the detail s
particular computer problems. This course is a prerequisite for all progr
courses.
Prerequisite: None.

106 Business Programming 2 4 4

effective use of data processing equipment in meeting the information needs of
e; utilizing the symbolic programming system as a tool in the solution of
es. The scope of the problems developed will vary from a modest payroll
re to the total information retrieval for a large and complex business.
isites: T-EDP 101, T-MAT 101, E-EDP 104.

108 Scientific Programming 2 4 4

ned to provide the student with sufficient knowledge of programming concepts
he may easily master any specific system with a minimum of instruction. The
will analyze, evaluate and make minor program modifications. (Specific systems
ted in detail so that the student may learn advanced programming and logical
making techniques as applied in sophisticated systems.)
isites: T-EDP 106, T-MAT 102.

202 Programming System Techniques 3 4 5

tudent will investigate the functions and capabilities of different data processing
s and will become familiar with some of the procedures necessary for
ming objectives. Programming drills, exercises and case studies will add the
of processing data to theoretical knowledge.
isites: T-EDP 102, T-EDP 104, T-EDP 108.

205 Linear Programming and Critical Path Method
4 2 5

re and case problems encompassing the scope and potential of using mathemati-
gramming with computers to increase industrial efficiency. This course presents
work technique of management planning, scheduling and control. Basic rules of
planning are presented with laboratory assignments designed to implement
retical aspects of Critical Path Methods (CPM).
isites: T-EDP 108, T-MAT 103, T-EDP 202.

208 Advance Programming Techniques 2 6 5

analysis and study of computer software, mathematical modeling, simulation,
ne theory. Designed to present an overview of the more complex computer
ions which have been designed to facilitate decision making.
isites: T-EDP 108, T-EDP 205.

216 Research Project 1 8 5

idual assignments of a carefully selected project will be the work of the student
this quarter. It will give the student an opportunity to initiate and carry out a
taken from outside the school. This course places the responsibility upon the
to solve a significant problem with a minimum of assistance from the
or.
isite: T-EDP 205.

EDP 260S Introduction to the IBM 360 3 0

A study of the characteristics of the IBM 360 computer. Topics studied input-output equipment, data representation, and programming systems with emphasis on assembly level programming and a selected compiler level la

ELECTRONICS (ELN)

T-ELN 101 Electronic Instruments and Measurements
1 4 or 6

A study of basic electronic instruments, their theory of operation, function, tol and calibration. Both service and laboratory instruments will be studied. Lal experience will provide application of each type instrument studied.
Prerequisite: T-ELC 102.

T-ELN 105 Control Devices 5 4 or 6

A study in depth of the electrical characteristics of vacuum tubes and tra Basic parameters and applications of each type device to the three configuratic three terminal two port system will be included.
Prerequisite: T-ELC 102.

T-ELN 110 Introduction to Electronics 3 0

An overview of the field of electronics and its interrelation to other scientifi Electrical, electronic, and electromechanical devices and their schematic represe are covered. Includes demonstrations, current films, and field trips to local in
Prerequisites: None.

T-ELN 201 Industrial Controls 3 2

Industrial controls is the study of modern methods of controlling machi electronic circuitry. Machinery controls and electronic mechanisms that auton operates machines will be studied. Types of motors, generators, control sign devices, thyratrons, gates, switches, and servomechanism circuits are major study.
Prerequisite: T-PHY 103.

T-ELN 205 Applications of Vacuum Tubes and Transistors
5 4 or 6

Practical applications of vacuum tubes and transistors to basic audio an radio frequency amplifiers, detectors, modulators and oscillators.
Prerequisite: T-ELN 105.

T-ELN 208 Solid State Thin Film Devices 5 2

A study of the processes by which thin-film and semiconductor circuits are fal isolation and metal-oxide-semiconductor field-effect transistors are covered at

ous types of applications are presented such as, logic networks, the computer-on-a-oncept, the use of feedback in integrated circuits, tuned integrated circuits, thin-ermollectrics, and microwave applications of integrated-circuit techniques.
equisite: T-CHM 111.

210 Semiconductor Circuit Analysis 5 2 or 3 6

udy in some depth of the analysis and design of transistor circuits. Network ns and equivalent circuits are used extensively in evaluating total circuit iance. Device peculiarities and limitations pertinent to reliable operations are red. H. Y. Z. and T. parameters are employed as well as signal-flow graphs.
iisite: T-ELN 105.

214 Wave Shaping and Pulse Circuits 2 2 or 3 3

dband amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, r amplifiers, clipper and clamper circuits.
iisites: T-ELN 105, T-MAT 103.

215 Wave Shaping and Pulse Circuits 2 2 or 3 3

techniques, diode switches, gates, step-counters, restorers and other specific which function as switches.
iisite: T-ELN 214.

220 Electronic Systems 5 4 or 6 7

lock diagram course investigating numerous electronic systems. Modules or of various circuits already studied are arranged in various manners to produce x electronic systems. Systems will be explained and reduced to functions and block diagrams. AM, FM, and Single Sideband transmitters and receivers, exing, TV transmitters and receivers, pulse-modulated systems, computers, ry, navigational systems, sonar and radar will be considered.
isite: T-ELN 215.

225 Transmission and Propagation 3 0 3

ntroduction to the electromagnetic radiation, principles of antenna, radiation and field strength. The characteristics and use of transmission lines in radio cy application. Factors involved in propagation, ground waves, reflections, es, atmospheric effects, ionosphere, fading, noise, static, wire radiators, directive fect of ground, impedance, antenna systems and arrays.
isite: T-ELN 105.
isite: T-ELN 205.

227 UHF and Microwave Systems 5 4 7

dy of UHF and VHF components, circuits, and measurement techniques. The

use of distributed constant elements, waveguides and coaxial cables, microwave
high frequency oscillators, magnetrons, klystrons, traveling wave tubes. An introd
to the use of the Smith Chart.
Prerequisite: T-ELN 225.

T-ELN 230 Television Systems 4 6

A study of the principles of television including the television system, camera
scanning and synchronization, composite video signal, receiver circuits, transı
equipment, color television, and closed-loop systems.
Corequisite: T-ELN 214.

T-ELN 235 Industrial Instrumentation 4 6

Broad introduction to use of industrial electro-mechanical and electronic
and equipment. Provides an understanding of the methods, techniques, and
required for installation, service and operation of a variety of industrial control sy
Analysis of sensing devices for detecting changes in pressure, temperature, hu
sound, light, electricity, the associated circuitry and indicating and recording d
Prerequisites: T-ELN 205, T-PHY 104.

T-ELN 240 Digital Computers 3 0

An exploration into the methodology of counting and computing. Various co
techniques will be investigated including: non-sinusoidal waveforms, binar
decade counters, industrial counters, readout devices, logic circuits, arithmetic c
storage devices, input-output devices, computer control, analog and digital con
Prerequisite: T-ELN 214.

T-ELN 245 Electronic Design Project 0 4

Students are required to design and construct a project approved by the inst
Includes selection of project, design, construction, and testing of completed
Projects may include: AM or FM transmitters or receivers, amplifiers, test equi
control devices, simple counters, lasers, masers, etc.
Prerequisite: T-ELN 205.

ENGLISH

T-ENG 101 Grammar 3 0

Designed to aid the student in the improvement of self-expression in gramma
approach is functional with emphasis on grammar, diction, sentence structure, pu
tion, and spelling. Intended to stimulate students in applying the basic princi
English grammar in their day-to-day situations in industry and social life.
Prerequisite: None.

T-ENG 102 Composition 3 0

Designed to aid the student in the improvement of self-expression in busine
technical composition. Emphasis is on the sentence, paragraph, and whole comp
Prerequisite: T-ENG 101.

103 Report Writing 3 0 3

fundamentals of English are utilized as a background for the organization and ues of modern report writing. Exercises in developing typical reports, using techniques and graphic devices are completed by the students. Practical tion in the preparation of a full-length report is required of each student at the the term. This report must have to do with something in his chosen curriculum. uisite: T-ENG 102.

204 Oral Communication 3 0 3

udy of basic concepts and principles of oral communications to enable the to communicate with others. Emphasis is placed on the speaker's attitude, cing diction, voice, and the application of particular techniques of theory to speaking habits and to produce effective oral presentation. Particular attention n to conducting meetings, conferences, and interviews. uisite: T-ENG 101.

206 Business Communication 3 0 3

elops skills in techniques in writing business communications. Business reports, ries of business conferences, letters involving credit, collections, adjustments, ints, orders, acknowledgments, remittances, and inquiry. uisite: T-ENG 102.

208 Reading Enrichment 3 0 3

course is designed to guide the student in a better understanding and a greater ation of our literary heritage.

eneral, selected poetry, short stories, plays, and the novel will be studied. hasis will be given to some of the influential and outstanding writers and ntributions.

uisites: None.

210 Advanced Writing 3 0 3

course is designed for students who show potential and are interested in further g writing skills.

cialized techniques other than those used in general composition will be used with emphasis given to fiction.

r genres will be covered according to student interest.

uisite: ENG 101, 102, 103, and permission of the instructor.

101 Reading Improvement 2 0 2

course is designed to improve the student's ability to read more rapidly and tely. Special emphasis is put on vocabulary, study habits, comprehension, and ques .

uisite: None.

102 Communication Skills 3 0 3

gned to promote effective communication through correct language usage in g and writing.

uisite: ENG 1101.

ENG 1103 Report Writing 3 0

Fundamentals of correct language usage applied to report writing. Emphasi principles of report construction and application to various report forms.
Prerequisite: ENG 1102.

T-ISC 201 Industrial Organization and Management 3 0

Organizational structure for industrial management; operational and financial ac including accounting, budgeting, banking, credit and industrial risk, forecas markets, selection and layout of physical facilities; selection, training and superv personnel as found in typical industrial organizations.
Prerequisite: None.

T-ISC 203 Motion Study 3 2

Types of methods studies and their applications. Process charts, analysis time study, work simplification, skill and effort rating.
Prerequisite: None.

T-ISC 209 Plant Layout 3 2

A practical study of factory planning with emphasis on the most efficient arran of work areas to achieve lower manufacturing costs. Layouts for small and sized plants, layout fundamentals, selection of production equipment and handling equipment. Effective management of men, money and materials in a facturing operation.
Prerequisites: T-MEC 201, T-DFT 102.

MATHEMATICS

MAT 100 FUNDAMENTALS OF MATH 5 0

Practical number theory, analysis of basic operations; addition, subtraction, cation and division. Fractions, decimals, powers and roots, percentages, ratio portion, plane and solid geometric figures used in industry; measurement of surfa volumes. Introduction of algebra used in practical solution of problems also log and their use.
Prerequisite: None.

T-MAT 101 Technical Mathematics 5 0

The complex number system is developed as a super-set generated by fund operations on the natural number set. Fundamental algebraic operations, linea tions, rectangular coordinates, analytic geometry of a line, systems of linear eq scientific notation, and vectors and right triangle trigonometry are introduced. are taught in a manner which allows the student to use them in practical appl
Prerequisite: Satisfactory evidence that admission requirements have been met.

T-MAT 102 Technical Mathematics 5 0

T-MAT 102 is a continuation of T-MAT 101. Advanced algebraic and trigon

are studied in depth. Topics included are: quadratic and higher degree equations, synthetic substitution, remainder and factor theorems, logarithmic and exponential ns and solutions of equations containing them, progressions, binomial expansions, x numbers, solution of oblique triangles, the general sine function, and the of trigonometric functions.
uisite: T-MAT 101.

103 Technical Mathematics 5 0 5

fundamental concepts of analytic geometry and differential and integral calculus roduced. Topics included are the conic sections and the general quadratic in riables, limits, derivatives, differentials, and indefinite and definite integrals of ic functions.
uisite: T-MAT 102.

121 Numbering System and Boolean Algebra
4 0 4

rsory treatment of the base-ten numbering system; functional introduction to ring systems with bases other than 10, transformation from one system to r; fundamental operation in systems other than the decimal; a detailed study of ary system in relation to machine calculations; principles of Boolean Algebra contribution to digital devices and data processing.
uisite: None.

201 Technical Mathematics 5 0 5

ontinuation of T-MAT 103. More advanced concepts of differentiation and tion are considered. Included are graphs and derivatives of the trigonometric ns, exponential and logarithmic differentiation and integration, advanced integration techniques, polar equations, parametric equations and Fourier series.
uisite: T-MAT 103.

208 Calculus and Laplace Transforms for Electronics
5 0 5

nvestigation of the methods of calculus which are of the most direct use in the f electronic circuits. Introduction to selected topics from differential equations place transforms and applications of these methods to the solution of electronic problems.
uisite: T-MAT 201.
uisite: T-ELN 214.

214 Statistics 5 0 5

theory of statistics and its application in modern business. Kinds of regularity ist among random fluctuations. Experience in associating and using mathematical to interpret physical phenomena and predicting the outcomes of experiments to practical business problems.
uisite: T-MAT 102.

MAT 215S Statistical Programming 3 2

Practical experience in the statistical solution of business problems thro use of computers. Measures of central tendency, variation, confidence interv of hypotheses, and relationships between variables calculated by Programming. of organizing, analyzing, interpreting and presenting data are studied.
Prerequisite: T-MAT 214.

T-MAT 219 Differential Equations 5 0

Methods of solving first-order and simple higher order ordinary differential e and linear differential equations with constant coefficients; solution of di equations by series; and numerical solutions of differential equations.
Prerequisite: T-MAT 201.

T-MAT 225 Numerical Analysis 5 0

A development of the mathematical principles upon which many computing are based. Topics introduced include theory of errors, numerical integrat differentiation, summation procedures, numerical solution of equations, and mations of various types.
Prerequisite: T-MAT 201.

MAT 1101 Fundamentals of Mathematics 5 0

Practical number theory. Analysis of basic operations: addition, subtraction, cation and division. Fractions, decimals, powers and roots, percentages, r proportion. Plane and solid geometric figures used in industry; measure surfaces and volumes. Introduction to algebra used in trades. Practice i
Prerequisite: None.

MAT 1102 Algebra 5 0

Basic concepts and operations of algebra: historical background of our number system; algebraic operations: addition, subtraction, multiplication and fractions, letter representation, grouping, factoring, ratio and proportions, v graphical and algebraic solution of first degree equations; solution of simu equations by: addition and subtraction, substitution, graphing, exponents, log tables and interpolations.
Prerequisite: None.

MAT 1103 Geometry 3 0

Fundamental properties and definitions; plane and solid geometric figures, general theorems, geometric construction of lines, angles and plane figures. angles, areas of plane figures, volumes of solids. Geometric principles are ap shop operations.
Prerequisite: None.

MAT 1104 Trigonometry 3 0

Trigonometric ratios; solving problems with right triangles, using tables, ar polating; solution of oblique triangles using law of sines and law of cosines; g

igonometric functions; inverse functions, trigonometric equations. All topics are
d to practical problems.
uisite: MAT 1103.

1115 Electrical Mathematics 5 0 5

introductory algebra course with trigonometry and vectors needed in alternating
t: algebraic operations of addition, subtraction, multiplication and division; use of
and signs, grouping, factoring; exponents, ratios and proportions; algebraic and
: solutions of first-degree equations; introduction to trigonometric functions,
raphs and applications to right triangles, addition, subtraction and resolution of
quantities.
uisite: None.

116 Electrical Mathematics 5 0 5

orking knowledge of the powers of 10, Ohm's law for series and parallel circuits,
tic equations, Kirchhoff's Laws, trigonometric functions, plane vectors, alter-
currents, vector algebra and logarithms.
uisite: MAT 1115.

123 Machinist Mathematics 3 0 3

duces gear ratio, lead screw and indexing problems with emphasis on application
machine shop. Practical applications and problems furnish the trainee with
nce in geometric propositions and trigonometric relations to shop problems;
les with an introduction to compound angle problems.
uisite: MAT 1104.

MECHANICAL (MEC)

101 Machine Processes 0 6° 2

ntroductory course designed to acquaint the student with basic hand tools,
rocedures and machine processes of our modern industry. It will include a study
suring instruments, characteristics of metals and cutting tools. The student
come familiar with the lathe family of machine tools by performing selected
ns such as turning, facing, threading, drilling, boring, and reaming.
uisite: None.

102 Machine Processes 0 6° 2

nced operations on lathe, drilling, boring and reaming machines. Milling machine
and practice. Thorough study of the types of milling machines, cutters, jig and
devices, and the accessories used in a modern industrial plant. Safety in the
nal shop is stressed.
isite: T-MEC 101.

110 Fundamental Mechanisms 2 4 4

dy of the purpose and actions of cams, cables, gear trains, differentials, screws,

belts, pulleys, shafts, levers, and other mechanical devices used to transmit or signals.
Prerequisite: T-PHY 102.

T-MEC 116 Engineering Materials 3 0

Study and testing of the properties of ferrous and non-ferrous metals and load and strain measurements, behavior of materials under load, qualities ot strength and control of the properties of the materials.
Prerequisite: T-PHY 102.

T-MEC 201 Machine Processes 2 6

Newer concepts of work handling and automatic machining process. production and new techniques in metal forming. Analysis of high-energy ultrasonic machining, electrolytic metal removal, chemical milling, numerical and simplified building block numerical control systems.
Prerequisite: T-MEC 103.

T-MEC 205 Strength of Materials 3 2

Study of principles and analysis of stresses which occur within machine and elements subjected to various types of loads such as static, impact, vary dynamic. Analyses of these stresses are made as applied to thin-walled cyli spheres, riveted and welded joints, beams, columns and machine components.
Prerequisites: T-PHY 106, T-MAT 102.

T-MEC 210 Physical Metallurgy 3 3°

Introductory course in metallurgy, a basic study of the properties of me alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear s and nuclear reactions. Solid (crystalline) structures, methods of designatin planes, liquid and vapor phases, phase diagrams, and alloy system
Prerequisite: T-PHY 101.

T-MEC 211 Physical Metallurgy 3 3°

Properties of metals and alloys, the reactions of metals, diffusion, carburizi bonding and homogenization, recrystallization and grain growth, age hardening, internal oxidation, heat treatment of steel, laboratory experiments and demon
Prerequisite: T-MEC 210.

T-MEC 213 Production Planning 3 3°

Day-to-day plant direction; forecasting, product planning and control, sc dispatching, routing, and inventory control. Case histories are discussed in the c and courses of corrective action are developed. Drafting room layouts for and control.
Prerequisite: T-DFT 102.
Corequisite: T-MEC 201.

T-MEC 235 Hydraulics and Pneumatics 3 3°

The basic theories of hydraulic and pneumatic systems. Combinations o in various circuits. Basic designs and functions of circuits and motors, hydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs. uisite: T-PHY 102.

237 Control Systems 2 4 4

raulic, pneumatic, mechanical, electrical and electronic control systems and nents. Basic description, analysis and explanation of operation. Typical perce characteristics, limitations on performance, accuracy, applications and their ion in industrial processes.
uisites: T-PHY 102, T-ELC 201.

.101 Machine Shop Theory and Practice 3 12 7

introduction to the machinist trade and the potential it holds for craftsman. primarily with the identification, care and use of basic hand tools and precision ing instruments. Elementary layout procedures and processes of lathe, drill grinding (off-hand) and milling machines will be introduced both in theory and e.
uisite: None.

.102 Machine Shop Theory and Practice 3 12 7

nced operations in layout tools and procedures, power sawing, drill press, grinder, milling machine shaper. The student will be introduced to the basic ons on the cylindrical grinder and will select projects encompassing all the ons, tools and procedures thus far used and those to be stressed throughout the

uisite: MEC 1101.

103 Machine Shop Theory and Practice 3 12 7

nced work on the engine lathe, turning, boring and threading machines, s, milling machine and shaper. Introduction to basic indexing and terminology dditional processes on calculating, cutting and measuring of spur, helical, and gears and wheels. The trainee will use precision tools and measuring instruments vernier height gages, protractors, comparators, etc. Basic exercises will be given turret lathe and on the tool and cutter grinder.
uisite: MEC 1102.

104 Machine Shop Theory and Practice 3 12 7

lopment of class projects using previously learned procedures in planning, t reading, machine operations, final assembly and inspection. Additional es on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, d milling machine operations, etc. Special procedures and operations, processes uipment, observing safety procedures faithfully and establishing of good work nd attitudes acceptable to the industry.
isite: MEC 1103.

113 Shop Processes 2 3 3

of practices used in metalworking shops: introduction to how materials can zed, and to the processes of shaping, forming and fabricating of metals. tration of the metalworking lathes, grinders, drills, milling machines, shapers,

planers, saws, broachers, gear cutting machines and finishing machines. A stud
capabilities of these machines.
Prerequisite: None.

MEC 1114 Shop Processes 2 3

Comparison of the unit-production and mass-production systems. Casting, forg allied processes, welding and sheet metal working processes are demonstrat discussed. Mass-production methods are studied in relationship to precision dim control.
Prerequisite: MEC 113.

MEC 1115 Treatment of Ferrous Metals 2 3

Investigates the properties of ferrous metals and tests to determine th Instructions will include some chemical metallurgy to provide a background understanding of the physical changes and causes of these changes in metals. metallurgy of ferrous metals, producing iron and steel, theory of alloys, sha forming, heat treatments for steel, surface treatments, alloy of special steel, clas of steels, and cast iron will be topics for study.
Prerequisite: None.

MEC 1116 Treatment of Non-Ferrous Metals 2 3

Continuation of the study of physical metallurgy. The non-ferrous metals: metals, (brass, bronze, lead), light metals (aluminum and magnesium), and co its alloys are studied. Power metallurgy, titanium, zirconium, indium and vana included in this course.
Prerequisite: MEC 1115.

MEC 1120 Duct Construction and Maintenance 3 6

Study of various duct materials including sheet steel, aluminum, and fib Safety, sheet metal hand tools, cutting and shaping machines, fasteners and fa practices, layout methods, and development of duct systems. The student wi various duct systems and perform on the site repairs including ducts made glass. A study is made of duct fittings, dampers and regulators, diffusers, he air washers, fans, insulation and ventilating hoods.
Prerequisites: DFT 1116, AHR 1123.
Corequisite: AHR 1126.

PHYSICS (PHY)

T-PHY 101 Physics: Properties of Matter 3 2

A fundamental course covering several basic principles of physics. The included are solids and their characteristics, liquids at rest and in motion, gas applications. Laboratory experiments and specialized problems dealing with th are part of this course.
Prerequisite: None.

102 Physics: Work, Energy, Power 3 2 4

r areas covered in this course are work, energy, and power. Instruction includes
pics as statics, forces, center of gravity, and dynamics. Units of measurement
eir applications are a vital part of this course. A practical approach is used in
g students the use of essential mathematical formulas.
isites: T-MAT 101, T-PHY 101.

103 Physics: Electricity 3 2 4

theories of electricity, types of electricity, methods of production, and trans-
and transforming of electricity. Electron theory, electricity by chemical action,
ity by friction, electricity by magnetism, induction voltage, amperage, resistance,
wer, wattage, and transformers are major parts of the course.
isites: T-MAT 101. T-PHY 101.

104 Physics: Light and Sound 3 2 4

rvey of the concepts involving wave motion leads to a study of sound, its
ion, transmission and detection. The principles of wave motion also serves as
oduction to a study of light, illumination and the principles involved in optical
ents. Application is stressed throughout.
isites: T-MAT 101, T-PHY 102.

106 Applied Mechanics 5 0 5

epts and principles of statics and dynamics. Parallel concurrent and noncurrent
stems in coplanar and noncoplanar situations. Concepts of centroids and center
ity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and

isites: T-MAT 102, T-PHY 102.

231 Fluid Mechanics 3 0 3

amental laws of fluid flow and application of these laws to the sizing of hot and
ter piping, steam piping, refrigerant piping, air ducts, pumps, and fans. Particular
is will be directed to calculations of capacity, horsepower, and head require-
f pumps and fans; to comparison of the several methods of piping and air duct
and to methods of fluid flow measurement.
isites: T-MAT 103, T-PHY 102.

01 Applied Science 3 2 4

troduction to physical principles and their application in industry.
s in this course include measurement; properties of solids, liquids, and gases;
ectrical principles.
isite: None.

02 Applied Science 3 2 4

econd in a series of two courses of applied physical principles. Topics introduced
course are heat and thermometry, and principles of force, motion, work, energy,
ver.
isite: PHY 1101.

POLITICAL SCIENCE (POL)

T-POL 201 United States Government 3 0

A study of government with emphasis on basic concepts, structure, powers, pr
and problems.
Prerequisite: None.

POWER MECHANICS (PME)

PME 1101 Internal Combustion Engine 3 12

Development of a thorough knowledge and ability in using, maintaining, an
the various hand tools and measuring devices needed in engine repair work.
the construction and operation of components of internal combustion engines. T
engine performance; servicing and maintenance of pistons, valves, cams and c
fuel and exhaust systems, cooling systems; proper lubrication; and methods o
diagnosing and repairing.
Prerequisite: None.

PME 1102 Engine Electrical and Fuel Systems 5 12

A thorough study of the electrical and fuel systems of the automobile.
cranking mechanism, generator, ignition, accessories and wiring; fuel pumps, car
and fuel injectors. Characteristics of fuels, types of fuel systems, special t
testing equipment for the fuel and electrical system.
Prerequisite: PME 1101.

PRACTICAL NURSING (PNE)

PNE 1001 Fundamentals of Health 2 0 0

This course is a study of total health and health habits and their effec
individual, the family, and the environment in which they live. The study
resources available to all persons and selected agencies that may be visited f
learning.
Prerequisite: None

PNE 1002 Basic Sciences 6 4 0

This course is designed to give the student an understanding and appre
basic science principles and their relationship to practical nursing. The course
study of the structure and functions of the nine systems of the body, the basic
of nutrition which involves mechanics of digestion, absorption and me
nutritional requirements for all age groups both sick and well, and selected le
Bacteriology as related to the prevention of diseases, promotion of health,
nurse's responsibilities in protecting the patients and others from illnes
infections.
Prerequisite: None

PNE 1003 Fundamentals of Practical Nursing 4 8 3

Designed to assist the beginning Practical Nurse student in acquiring k
basic to the development of skills needed for safe and effective bedsid

ody mechanics for nurse and patient. Laboratory practice in daily hygienic patients' medical and surgical aseptic needs.

isite: None

004 Clinical Experience I 0 0 21 7

ning experiences in a general hospital under supervision of clinical s, with opportunity to practice skills learned in the laboratory, and anding of role on the nursing team.

isites: PSY 1101, PNE 1001, 1002, 1003

005 Medical-Surgical Nursing I 2 2 0 3

ned to give the student material basic to the beginning understanding of ursing care of patients with common problems presented by illness. es of illness, diagnostic tests, physiologic reaction to pain, needs of with long term illnesses, rehabilitation, pre and post operative needs, sia agents, and modification of diet for disease condition.

isite: PNE 1001, 1002, 1003; PSY 1101

1006 Maternity Nursing 2 2 0 3

ntation of modern aspects of maternity nursing with emphasis on normal cs. Detailed presentation of material on nursing care during antepartum, nd postpartum periods. Care of the newborn baby and methods of teaching others. Emphasis is to provide better and safer care for the expectant and her baby.

isites: PNE 1001, 1002, 1003; PSY 1101

007 Nursing of Children 2 2 0 3

rstanding of the scope and aims of modern nursing of children. Physical ces in the child from the adult. Methods of answering the needs of the ized child and his parents. Common disorders of children and their tions for nursing care. Nursing care of the seriously ill child with is on her role on the health team.

isites: PSY 1101, PNE 1001, 1002, 1003

08 Clinical Experience II 0 0 21 7

ner experience in basic areas of medical, surgical, pediatric, or obstetric nursing. sis on observation of signs and symptoms and assuming responsibility in g to head nurse.

isite: PNE 1004.

09 Medical-Surgical Nursing II 4 2 0 5

ned to develop knowledge of common disorders of body systems, the nursing cio-psychological implications. Included are the disorders of the circulatory and respiratory system.

isite: PNE 1005.

11 Clinical Experience III 0 0 21 7

ner experience in the practice of nursing skills. Continued experiences in the

basic areas of medical-surgical nursing. Experience in giving oral and topical me under the direction of clinical teacher. Emphasis on observation of signs and s and taking part in making nursing judgments in team conference. Isolation te and practice, oxygen therapy. Continued experience in medical-surgical, pedi maternity nursing with emphasis on the role as an assistant to the professional caring for the seriously ill patient. All experience in the clinical area is u supervision of the clinical teacher.
Prerequisite: PNE 1008.

PNE 1012 Advanced Medical-Surgical Nursing III 4 0 0

Continue the study of the nursing needs of the more seriously ill or aging with disorders affecting the systems: Gastro-Intestinal, Muscular-Skeletal, including eyes, ears, nose and throat, endocrine, urinary and integrementary. and emergency nursing are also included.
Prerequisite: PNE 1009.

PNE 1013 Mental Health 2 2 0

An introduction of mental, emotional and physical reactions caused by il hospitalization. The study of the more frequent symptoms of mental illne the Practical Nurse student's role in the care of mentally or emotionally patient. Common terminology associated with the field of mental health.
Prerequisite: PSY 1101.

PNE 1014 Vocational Adjustment 2 2 0

Designed to present further nursing ethics, medical-legal aspects of Practica and a study of the organizations for the graduate Practical Nurse, and the opportunities in Practical Nursing and the obligations and responsibilities of the Practical Nurse as a person, a worker, and a citizen.
Prerequisite: PNE 1012.

PSYCHOLOGY (PSY)

T-PSY 112 Personality Development 3 0

Designed to help the student recognize the importance of the physical, in social, and emotional dimensions of personality. Emphasis is placed on groo methods of personality improvement.

T-PSY 206 Applied Psychology 3 0

A study of the principles of psychology that will be of assistance in the unde of inter-personal relations on the job. Motivation, feeling and emotions are c with particular reference to on-the-job problems. Other topics investigated are: selection, supervision, job satisfaction, and industrial conflicts. Attention is als personal and group dynamics so that the student may learn to apply the pri mental hygiene to his adjustment problems as a worker and a member of th community.
Prerequisite: None.

221 Psychology of Color 3 0 3

udy of color, the conscious and subconscious response to combinations of colors lied to visual communications.
uisite: None.

01 Human Relations 3 0 3

udy of basic principles of human behavior. The problems of the individual are in relation to society, group membership, and relationships within the work n.
uisite: None.

12 Personality Development 3 0 3

gned to help the student recognize the importance of the physical, intellectual, and emotional dimensions of personality. Emphasis is placed on grooming and s of personality improvement.

SOCIAL SCIENCES

201 Social Science 3 0 3

ntegrated course in the social sciences, drawing from the fields of anthropology, ogy, history, and sociology.
isite: None.

202 Social Science 3 0 3

rther study of social sciences with emphasis on economics, political science, ial problems as they relate to the individual.
uisite: T-SSC 201.

205 American Institutions 3 0 3

dy of the effect of American social, economic, and political institutions upon the ual as a citizen and as a worker. The course dwells upon current local, l, and global problems viewed in the light of our political and economic heritage.
isite: None.

SOCIOLOGY (SOC)

207 Rural Society 3 0 3

dy of selected elements of rural sociology with emphasis on current social . The course provides a sociological background for the understanding of rural hanges. Areas of study include rural culture, group relationships, social classes, d suburban communities, farm organizations, the communication of agricultural ogy, rural social problems, agricultural adjustment and population change.
isite: None.

WELDING (WLD)

WLD 1101 Basic Gas & Electric Welding 0 3

Welding demonstrations by the instructor and practice by students in the shop. Safe and correct methods of assembling and operating the welding ec Practice will be given for surface welding; brazing, silver-soldering, and flan methods applicable to mechanical repair work using gas welding. Practice electric welding will be given as it applies to simple construction and m repair.
Prerequisite: None.

°Seminar

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1969

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TECHNICAL INSTITUTE OF ALAMANCE

411 Camp Road, Burlington, North Carolina 27215

Phone 226-6307

Home Telephone Number ______________.

1. Name (Mr., Miss, Mrs.)____
   Last First Middle

   ______________________________ ______________________________
   If you are married, give maiden name. If you are under 21, give name of parent

2. Home Address____
   Name and Street City State Zip

3. Marital Status____
   Married, Single, Divorced, etc. If married, give spouse's name and address.

4. Birth______________________ Age______ Birthplace______________ State______
   Month Day Year City or County

5. Social Security No. ______________________Sex______________ Race______________

6. High School Last Attended______________ ______________ ______________
   Name of School Address of School County

   Did you (or will you) graduate? (a) yes______ Date of Graduation ______________
   (b) no______ Grade Completed ______________
   (c) Equivalency Certificate ______________

7. Schools or colleges attended after high school graduation, if any ______________.

   ______________________________ ______________________________
   Name of School Dates of Attendance

   ______________________________ ______________________________
   Name of School Dates of Attendance

8. Have you ever been dismissed from a college? No______ Yes______ If yes, which college______________

   when ____.

9. I plan to enroll full time (12 or more quarter hours)______________. Less than full-time______________.

10. I plan to attend Day Classes______________ Evening Classes______________.

11. This application is for admission to what quarter? Fall 19______, Winter 19______
    Spring 19______, Summer 19______.

12. I need information on area housing______________.

I understand that I am responsible for having official transcripts of my high school and previous college records, if any, sent directly to the Admission Officer, Technical Institute of Alamance, 411 Camp Road, Burlington, North Carolina 27215. I certify that I have listed above all schools or colleges attended after high school, if any. NOTE: Special physical examination forms are required of Practical Nursing and Dental Assistant applicants. These forms will not be sent to the student until 30 days prior to enrollment.

Date of application ______________________Applicant's Signature ______________

(over)

Rate as excellent, good, fair, or poor: Your general health——— eyesight

speech——— What is your height?——— weight?———.

Do you have any physical handicaps that interfere with your studies or work that you might assume: If so, please explain———

Are you at present receiving medical care of any sort?——— If so, please describe and give dates.———

FIELDS OF STUDY

Please place a check mark before the field of study you wish to pursue. Check only one.

TECHNICAL PROGRAMS

Leading to associate of applied science degree and preparation for employment.

BUSINESS EDUCATION TECHNOLOGIES

———Business Administration

———Electronic Data Processing—Business

———Electronic Date Processing—Scientific

———Medical Secretary

———Engineering and Technical Secretary

ENGINEERING TECHNOLOGIES

———Air Conditioning, Heating, Refrigeration

———Chemical Technology

———Drafting and Design Technology

———Electromechanical Technology

———Manufacturing Technology

———Electronics Technology

SPECIAL — TECHNOLOGY

———Commercial Art and Advertising Design

VOCATIONAL PROGRAMS

Leading to a diploma and preparation for employment.

———Air Conditioning, Heating, and Refrigeration

———Automotive Mechanics

———Dental Assistant

———Mechanical Drafting

———Machinist Trade

———Practical Nursing

EXTENSION CERTIFICATE PROGRAMS

Job related for employed person. (Title see below)

———Air Conditioning, Heating and Refrigeration

———Automotive Mechanics

———Drafting — Mechanical

———Radio and TV

———Machine Shop

———(Other) ———

I am interested in———

———Undecided. I would like to have assistance through vocational counseling.

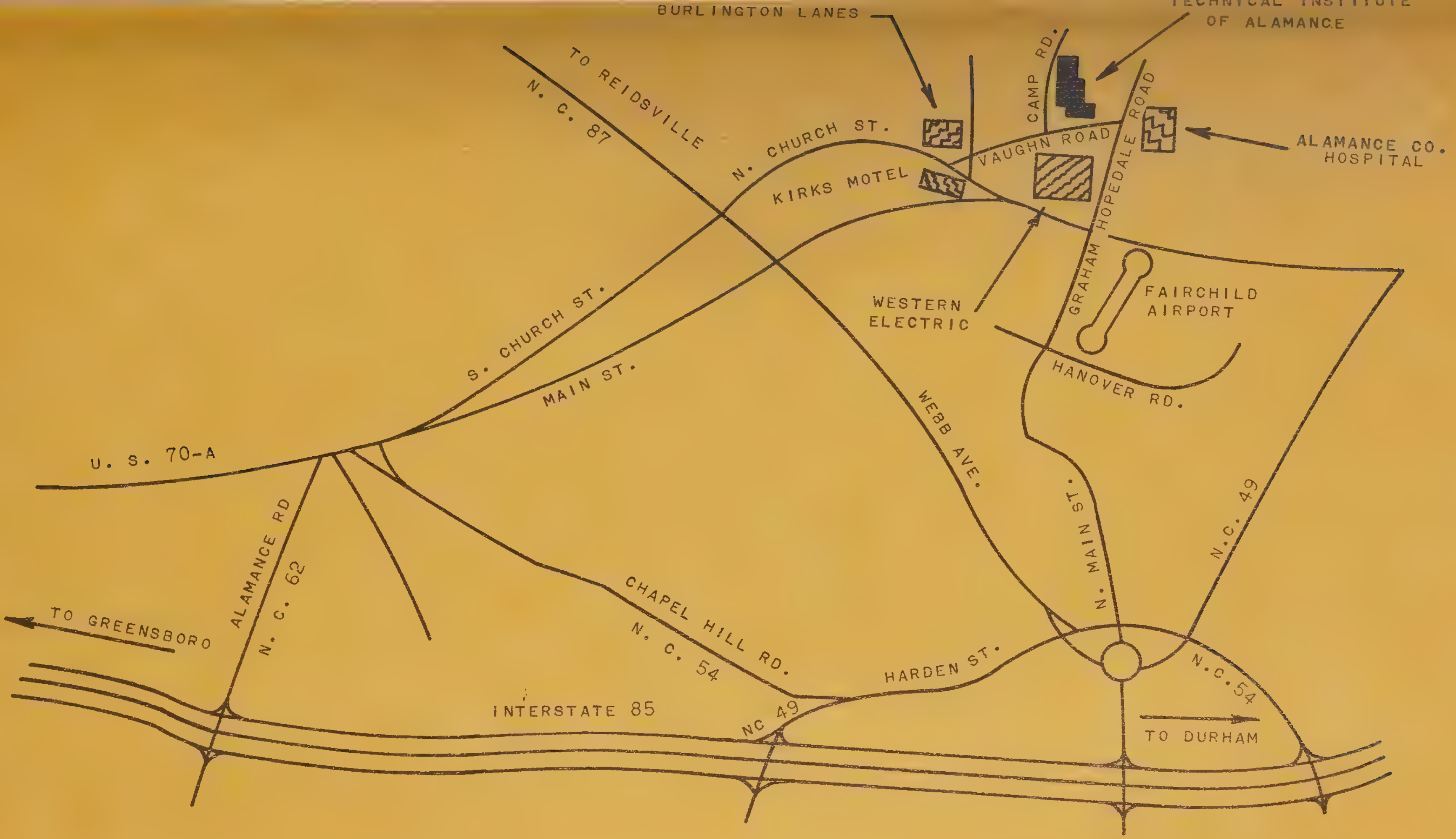
Character References (list three)

On the references below, please list three people who can attest to your character and potential.

Name——— Address———

Name——— Address———

Name——— Address———

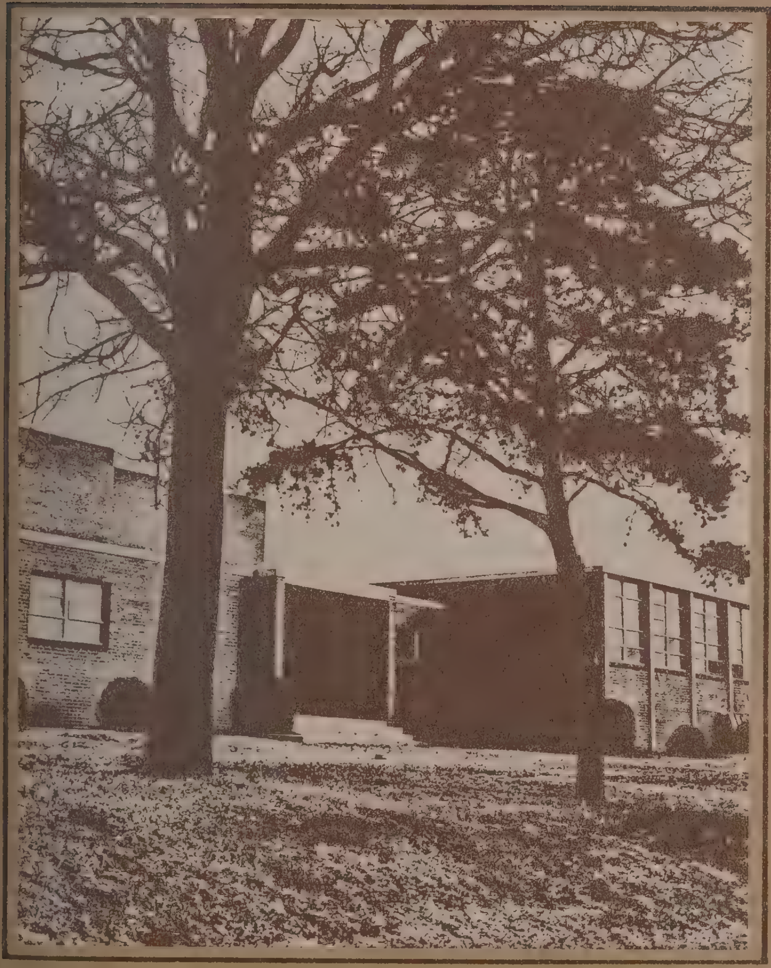

BURLINGTON LANES
TECHNICAL INSTITUTE
OF ALAMANCE
ALAMANCE CO.
HOSPITAL
CAMP RD.
TO REIDSVILLE
N. C. 87
N. CHURCH ST.
KIRKS MOTEL
VAUGHN ROAD
GRAHAM HOPEDALE ROAD
WESTERN
ELECTRIC
FAIRCHILD
AIRPORT
HANOVER RD.
S. CHURCH ST.
MAIN ST.
WEBB AVE.
N. MAIN ST.
N.C. 49
U. S. 70-A
ALAMANCE RD
N. C. 62
CHAPEL HILL RD.
N. C. 54
HARDEN ST.
N.C. 54
TO GREENSBORO
INTERSTATE 85
NC 49
TO DURHAM

Burlington, North Carolina 27215

ADVANCE

LIBRARY RATE

MR. GEORGE STEVENSON
NORTH CAROLINA COLLECTION
UNIVERSITY OF NORTH CAROLINA
CHAPEL HILL, NORTH CAROLINA



general catalog

1970-1972

technical institute of alamance
burlington, north carolina

TECHNICAL INSTITUTE OF ALAMANCE
1970-71 SCHOOL CALENDAR

FALL QUARTER 1970

Orientation for New Students	September 8
Registration	September 9
Classes Begin	September 10
Last Day Course May Be Added	September 16
Classes End	November 25
Thanksgiving Holidays	November 26-27

WINTER QUARTER 1970-71

Registration	December 2
Classes Begin	December 3
Last Day Course May Be Added	December 9
Christmas Holidays	December 23-31
New Year's Holiday	January 1, 1971
Classes End	March 2

SPRING QUARTER 1971

Registration	March 8
Classes Begin	March 9
Last Day Course May Be Added	March 15
Easter Holidays	April 9-12
Classes End	May 26

SUMMER QUARTER 1971

Registration	May 31
Classes Begin	June 1
Last Day Course May Be Added	June 7
Summer Vacation	July 2-9
Classes End	August 25

general catalog
1970-1972
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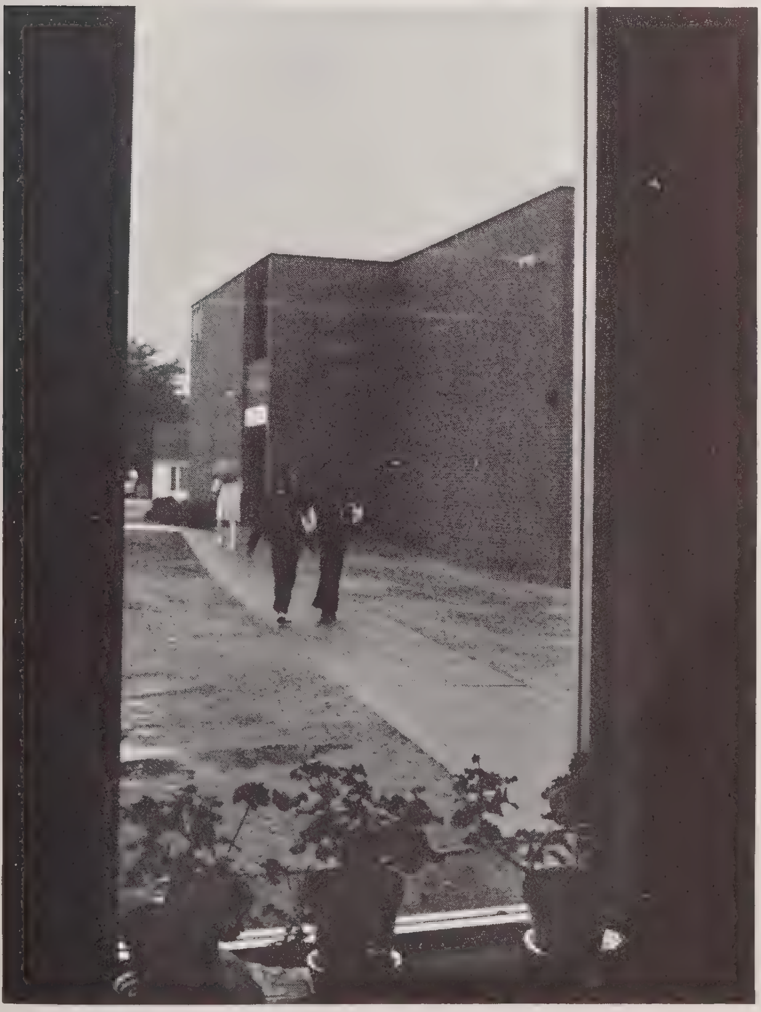
burlington, north carolina



Technical Institute of Alamance is a fully accredited member of The Southern
ciation of Colleges and Secondary Schools.

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Students having questions not answered in this publication may secure additional information from The Director of Student Personnel, Technical Institute of Alamance, 411 Camp Road, Burlington, North Carolina 27215. Telephone 226-6307

The Legal and Corporate Name of the Institution is:
"**TECHNICAL INSTITUTE OF ALAMANCE**"

The provisions of this publication are not to be regarded as an irrevocable co
between the student and the Technical Institute of Alamance. The Institute re
the right to make changes in the regulations, courses, fees, and other matt
policy and procedure as and when deemed necessary. The Institute further re
the right, at any time, to request the student to withdraw when it considers such
to be in the best interest of the institution.

CORRESPONDENCE DIRECTORY

or prompt handling, please address inquiries as indicated below:

eneral Information	Office of the President
usiness Matters	Office of the Business Manager
dmissions, Students Information, d Counseling Services	Office of the Director of Student Personnel
ocational-Technical ograms	Office of the Director of Occupational Programs
vening Programs	Office of the Director of Evening Programs
eneral Adult Education	Office of the Director of General Adult Education

isitors are always welcome at the Technical Institute of Alamance. The Administra- e Offices are open Monday through Thursday from 8:00 a.m. to 10:00 p.m. and iday from 8:00 a.m. to 5:00 p.m. Visitors desiring interviews with members of the aff are urged to make appointments in advance.

A MAP SHOWING THE LOCATION OF THE SCHOOL

CAN BE FOUND ON THE INSIDE BACK COVER.

BOARD OF TRUSTEES

W. Clary Holt (Chairman)
Partner-Attorney
Sanders and Holt

J. Nimrod Harris (Vice-Chairman)
Secretary-Treasurer
Annedeen Hosiery

Bernie Bean
Vice President & Assistant
Production Manager
White Furniture Co.

Wallace Gee
President-Treasurer
Wallace Sales

Hubert Green
Industrial Engineer
Burlington Industries, Inc.

Harry B. Heilig
Manager
Manufacture Engineering
Western Electric Company

J. Robert Holt
Vice-President
The Mebane Company

Mrs. B. Tate Horton
Homemaker

Myron Rhyne
Executive Vice-President
Cannon Mills

Dr. Carl M. Sellars
Veterinarian
Sellars Animal Hospital

Elijah Shaw
Welder Operator
Western Electric Co.

D. J. Walker, Jr.
Partner-Attorney
Walker, Harris, and Pierc

ADMINISTRATIVE OFFICERS

illiam E. Taylor .... President
dwin L. Barnes .... Administrative Assistant
Dillon Cherry .... Business Manager
aul C. Davis .... Extension Director for Adult Basic Education
ay N. Easter .... Director of Student Personnel
. Glenn Klutz .... Registrar
dgar P. Lynch .... Director of Learning Resources Center
on McCarter .... Director of General Adult Education
loyd D. Turnage .... Director of Occupational Programs
. Dale Vaughn .... Director of Evening Programs

COUNSELORS

rs. Ella Ray Chacey
Richard E. Davis

STAFF

rs. Effie Lambert	Bookkeeper
scar W. Miles	Maintenance Supervisor Building and Equipment
rs. Edith Lougee	Student Concession Supervisor
rs. Geraldine Nicks	Bookstore Manager

SECRETARIAL STAFF

rs. Dorothy Allred
rs. Glenda Blue
rs. Jeanne Diffee
athryn Faulkner
rs. Rosa Flynt
rs. Ruby Grant
Mrs. Ruth Holloway
Mrs. Nancy Leach
Mrs. Annie Mitchell
Mrs. Pam Poindexter
Mrs. Delores Qualls

AUDIO-VISUAL

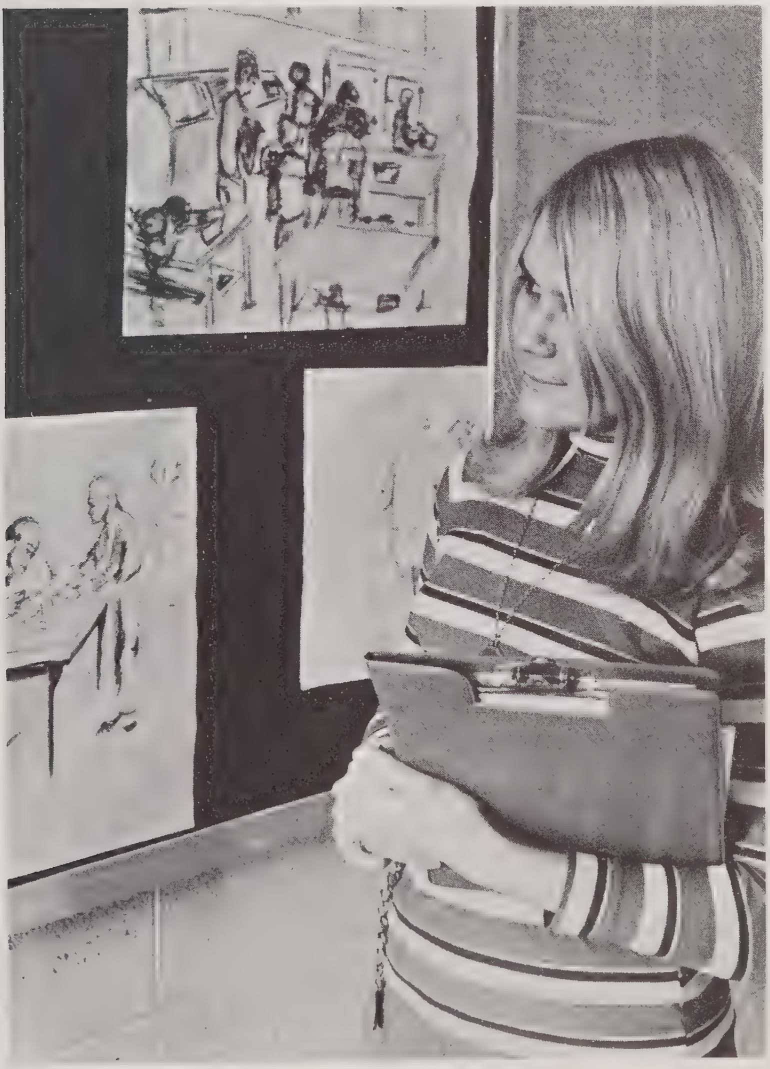
rs. Nancy Willis .... Audio-Visual Coordinator

FULL-TIME INSTRUCTIONAL STAFF

Mrs. Iris Abernathy	Department Head, Chemica
Pedro Alomia	Department Head, Air Conditioning and Refrigeratio
Mrs. Ellen H. Averitt	Department Head, General Office Technolog
Mrs. Rebecca M. Baker	Learning Laboratory Coordinat
Vernon M. Cheek	Accountin
Gilmer W. Dodson	Department Head, Data Processin
Garvin J. Ducker	Division Chairman, Trade
Miss Frances Durant	Art and Social Science
Mrs. Ruth Elzey	Division Chairman, Health Occupation
Robert J. Graham	Learning Laboratory and Related Studie
Terrance Hanner	Data Processin
Jerry L. Harris	Division Chairman, Engineering Technolog
Julius A. Kimbro	Data Processing and Mathemati
Charles W. Lowry	Division Chairman, Business Technolog
Mrs. Mildred B. Lynch	Dental Assistin
Mrs. Betty Maghan	Developmental Studie
Mrs. Jean H. McMillan	Department Head, Secretari
Bobby L. Minnis	Department Head, Englis
James C. Newbold	Department Head, Auto Mechani
Harry E. Palmer	Division Chairman, Applied Ar
Mrs. Wanda Palmer	Secretarial and Business Administratio
Mrs. Florence Pate	Practical Nursin
James E. Peeples	Department Head, Electronics and Radio and T
Rudy H. Smith	Department Head, Mathematics and Physi
John S. Stewart	Department Head, Drafting and Design — Mechani
Ralph Stockard	Electroni
James G. C. Swinney, Jr.	Division Chairman, Related Studi
Arthur Sykes	Department Head, Machinist, Manufacturin

I

general information



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HISTORY

The Technical Institute of Alamance was established in 1959. Its esta lishment was part of a state-wide system known as Industrial Educati Centers. Through the cooperative efforts of the State Department of Tra and Industrial Education and the school systems of Alamance County a Burlington, the Burlington-Alamance County Industrial Education Cent was begun.

The need for and the development of the Institute has been center on the principle of responsiveness to changing needs and conditions in t area. The expansion of the industrial and technological era in the State h created many new employment opportunities for technically trained pe sonnel. In addition, the right of every individual to have an education opportunity to develop according to one's potential has been recognize

The initiation of a state-wide system of Industrial Education Cente was begun in 1957 by the allocation of funds by the General Assembly. 1959, the General Assembly officially designated this type of vocation school as an Industrial Education Center.

Under legislation enacted in 1963, administration of the Industr Education Center was transferred to the State Board of Education, D partment of Community Colleges. The local control of the Institution w vested in a board of trustees by the new legislation.

In continuance of the principle of responsiveness to changing nee and conditions in the area, the Board of Trustees applied to the Sta Board of Education through the State Department of Community Colleg to become a Technical Institute. The State Board of Education approv the change in status to a Technical Institute in January, 1964. Along wi the approval, authority was granted to award the degree, Associate Applied Science Degree (A.A.S.), in approved programs. In the spring 1964, the Board of Trustees changed the name of the Institute to Technic Institute of Alamance.

Future development of the Technical Institute of Alamance will, as past, be constantly responsive to the educational and occupational as ll as culturally oriented needs of the community.

In November of 1966 the Board of Trustees of the Technical Institute of amance authorized an institutional self-study to assist in measuring the ectiveness of the educational program of the school. The Technical stitute of Alamance was accredited by the Southern Association of lleges and Schools in December, 1969, as a result of this self-study and view by a visiting committee from the Association.

RPOSE

The purpose of the Technical Institute of Alamance is to meet the edu- tional needs of students and the community alike. In an effort to be sponsive to these many and varied needs, a variety of curricula is fered. Occupationally oriented curricula are provided for those desiring ining from employment in business and commerce, in health-related lds, in skilled trades, and at the technicial level in industry. Due to ntinual technological advances, it will be necessary to continue offering urses that will enable individuals to up-date or to up-grade their skills.

Courses for persons eighteen years old or older who failed to complete gh school are offered as well as other general adult education courses r the social, cultural, and personal development of adults. Educational rvices—speakers, resource personnel or materials, and special programs— ill be made available to individuals and organizations as requested.

The educational, cultural, and social aspects of the individual's total velopment is encouraged through well rounded curricula, adequate cilities and equipment, qualified faculty and student activities.

LICY OF ADMISSIONS

Through following an "open door" policy of admissions at the Technical stitute of Alamance, it is possible for a high school graduate or a school aver 18 years old or older needing formal educational opportunity to be rved by the institution.

The "open door" policy does not eliminate the restrictions on admission specific programs. It does mean that these restrictions will be flexible ough under careful guidance to allow a student every reasonable oppor- nity to prove himself under good teaching. A student will be afforded e opportunity to eliminate admission requirement deficiencies through medial work, and may remain in the program of remedial work as long he makes satisfactory progress. As soon as a student can meet the specific lmission requirements, he may be enrolled in a curriculum. Refer to ecific department for admission requirements for each program.

Any person who wishes to take a course or program is asked to complete an application form and return it to the Institute. Upon receipt of th application, the Student Personnel Office will mail promptly to the pr spective student instructions regarding admission procedures. Applic tions should be submitted well in advance of the beginning of the ter in which the student desires to enroll. While students may be processe on the day of registration, an early application assures adequate tim for the processing of the student and enables entry into a program whe enrollment may be limited. Candidates are encouraged to apply earl to be assured of a place in class. Classes are closed when maximum e rollment is reached. A student who plans to pursue a diploma or associat degree must ask his high school or college to submit a transcript of a previous work undertaken. Prior to registration, candidates may be r quested to appear at the Institute for a personal interview and tests.

OOK
LIBRARY

II

general adult education

II

GENERAL ADULT EDUCATION

The Department of General Adult Education provides the adult c munity with a wide range of educational opportunities.

The adult of any educational level can choose a program to fit objective from current offerings, or one can make special requests.

The categories below are representative samples of educational op tunities. For more detailed information, please refer to the *Adult Educa Catalog.*

ADULT BASIC EDUCATION

Basic education (grades 1-8) is open to any adult at least 18 years ol

Classes meet twice weekly, three hours each night, and are locate various communities throughout Alamance and Caswell Counties. Read writing, spelling, and arithmetic make up the major areas of study. student may enter the program at any time, and progress at his own sp This program is free of charge.

After finishing the eighth grade level, the student may enter the A High School.

ADULT HIGH SCHOOL

In cooperation with the Burlington City Schools, TIA offers a high sc diploma program to adults who failed to graduate from the public sch The student may transfer completed units from his previous high sc Units are earned through regular classroom study. There is no tuition cha however, the cost of books will range from $3 to $5 per course.

To be enrolled a student must be at least 18 years old and his reg high school class must have already graduated. He must have completed eighth grade in public school or the eighth grade level in the Adult B Program described above.

e may enter at the beginning of any quarter, approximately September 1, ember 1, March 1, and June 1.

ecific high school courses are offered from the broad fields of English, ematics, social studies, science, foreign languages, and vocational ing.

raduates will be issued an Adult High School Diploma from the co- ating public school board.

dults who already have a high school diploma may enroll in high school ses for refresher training.

F-IMPROVEMENT AND GENERAL INTEREST COURSES

broad range of courses is offered in this area, including, but not ed to, the list below. Courses are offered day or night, for short dura- , in order to fit the busy adult's schedule. Variations of course ings are limted only by community interest and available instructors. *lts should call the Institute to express their areas of interest.* There is uition charge for these courses.

demic

Special Remedial Courses
College Preparatory Courses
Advanced Courses

ative Arts

Music Reading Clinic
Painting and Drawing
Art Appreciation
Art Exhibits
Creative Writing

ent Education

Adolescent Behavior
Pre-school Problems
Child Psychology
Maternity Care
Modern Math for Parents
Speech Therapy for Parents
Drug Abuse

guage Arts

Literature
Creative Writing
Public Speaking
Speedreading
Effective Listening

Hobby Courses

Small Engine Repair
Auto Tune-up at Home
Orientation to the Auto for Women
Ham Radio
Orientation to the Motorcycle
Volunteer Choir
Ground School for Private Pilots
Boating and Seamanship
Horse Care and Management

Citizenship

North Carolina History
American History
Political Parties
The Constitution
Forums on Community Affairs

Family Life

Mental Hygiene
Geriatrics
Community-Family Relations
Exceptional Children

Homemaking

- Sewing
- Tailoring
- Interior Decorating
- Nutrition
- Landscaping and Gardening
- Drapery Making

Foreign Languages

- Conversational French
- Conversational Spanish

Consumer Education

- Family Finance
- Law for the Layman
- Consumer Problems
- Personal Investments

OCCUPATIONAL EXTENSION

Extension courses are job-related part-time studies to increase s of employees.

Special extension areas are state-wide in nature. These courses ca taken through many of the Community College Systems' institut throughout the state, each issuing cumulative credits toward exten diplomas.

Fire Service Training

Designed for full-time and volunteer firemen including courses suc

- Arson
- Fire Brigade
- Salvage Operation
- Protective Equipment
- First Aid and Rescue
- Forcible Entry
- Extinguisher Practices
- Rope Practices
- Home Fire Safety
- Area Fire Schools

Hospitality Training

Designed for the hotel-motel and food service industry including courses as:

- Waitress Training
- Housekeeping
- Management
- Communication
- Promotion
- Service Station Retailing
- Food Preparation
- School Food Service

Law Enforcement

Designed for law enforcement officers including such courses as:

- Introduction to Police Science
- Courts and Law
- Elements of Arrest
- Search and Seizure
- Evidence
- Investigation
- Motor Vehicle Law
- Liquor Law
- Administration
- Human and Public Relation
- Riot Control
- Chemical Tests for Alcohol

ervisory Development Training

esigned for the supervisory or pre-supervisory level including courses in:

- Principles of Supervision
- Human Relations
- Act of Motivating People
- Economics in Business and Industry
- Job Methods
- Conference Leadership
- Job Instruction Training
- Creative Thinking
- Industrial Safety and Accident Prevention
- Effective Communications
- Effective Writing
- Effective Speaking
- Reading Improvement
- Work Measurement
- Industrial First Aid
- The Supervisor in North Carolina
- The Supervisor and Employee Benefits
- Job Analysis Training
- Cost Accounting for Supervisors

diploma in supervisory Development Training is offered by the Depart-
t of Community Colleges in cooperation with Technical Institute of
mance. Supervisors may qualify for a SDT Diploma by completing nine
uired supervisory courses totaling 174 clock hours of instruction.

xtension courses are also developed to meet local needs as they arise.
rses are offered day or night, for various durations, to meet the working
lt's schedule. The following courses represent examples of possible
rings:

ational

- Basic Electricity
- Air Conditioning
- Machine Shop
- Auto Mechanics
- Drafting
- Slide Rule
- Blueprint Reading
- Loom Fixing
- Radio-TV Repair
- Knitting Machine Fixing
- Home Appliance Repair
- Weaving
- Bricklaying
- Farm Electrification
- Apprenticeship Training
- Power Sewing
- Tractor Repair
- Nurses Aide
- Child Care
- Small Engine Repair

hnical

- Electronics
- Computer Operation
- Chemistry
- Fabric Design
- C.O.B.O.L.—Common Business Oriented Language
- Precision Measurements

essional

- Review for Licensed Professional Engineers

Refresher for Registered Nurses
Fundamentals of Real Estate
Methods of Teaching Vocational Subjects
Graduate Courses in Education (In cooperation with graduate schools
Advanced Pharmacology for Licensed Practical Nurses

Other special programs may be offered to meet the training requir ments of a specific business or industry.

Instructors are selected from men who are academically qualified an who have **demonstrated successful work experience** in the subject area to b taught. Frequent use of case studies, audio-visual aids, and class particip tion insure a high degree of student interest.

Classes are held both day and night in the modern Technical Institu building or at the site of employment.

LEARNING LABORATORY

The Learning Laboratory features programmed, self-instruction in are of the language arts, social studies, mathematics, science, foreign languag art, and academic skills. Vocational courses are also available in electricit electronics, and business education.

Programmed materials enable the student to **progress at his own spe and to study during scheduled time periods most convenient to him,** and study without competition with fellow students. Learning Lab hours a 8:00 A. M. to 9:30 P. M. Monday through Thursday, and 8:00 A. M. to 4: P. M. Fridays. Lab courses frequently meet the need of students who schedules make classroom attendance difficult.

Many adults study in the Learning Lab in preparation for the State Hi School Equivalency Examination, which is administered at Techni Institute of Alamance. Some Lab courses are transferable into the Ad High School Diploma Program.

Anyone at least 18 years old can enroll any time during any quarter.

A coordinator is available to counsel and assist students. No grades issued, but students are clearly aware of progress made.

All Learning Laboratory study is **free of charge.**

For further information about specific courses in the Lab, please re to **The Learning Laboratory Catalog.**

III

curriculum programs

III

GENERAL ADMISSION INFORMATION

At the Technical Institute of Alamance the "open door" policy provi
entrance to any individual who feels that he might benefit from traini
and/or services offered.

Counseling services are available to all students, beginning with
placement interview and continuing throughout the student's enrollme
Every effort is made to assist students to recognize and to understa
their aspirations, educational preparation, interests, motivation and car
objectives. Assistance is available to help each student recognize his stren
and weakness in relation to academic programs.

BASICALLY THE APPLICANT:

1. Must be eighteen years of age or older (or a high school gradua to be admitted to the Institute.
2. Must submit an application form.
3. Must have high school (and college) transcript or previous a demic work or high school equivalency (GED) scores submit to the Institute.
4. Should report to the Institute for admission counseling and ap priate placement testing for which there is no fee. (Appoint schedules for testing will be mailed as application is processed
5. Must be in good or acceptable physical and mental health.

Various degree and diploma programs are open to the student ente
TIA. In addition to the basic standards for admission, specific requirem
may apply to certain programs. These specific requirements are in
section of the catalog giving the program description. Early submis
of application and meeting placement test schedules will facilitate acc
ance.

SCHEDULE OF CURRICULUM CLASSES

Course Offerings

Shortly before registration each quarter, the Institute will announ er schedule of courses to be offered. This will generally include those es required for a student to complete the work as outlined in the og for his curriuclum. In some instances, however, it will be necessary e Institute to rearrange this sequence of course offerings. Every effort e made to enable a student to complete his program in the minimum ble time. Whenever practical, make-up classes and special courses be offered to those needing them.

ing this master schedule of courses, each student will consult with dvisor prior to registration to arrange a class schedule to meet his particular requirements.

Hours

e Institute will normally offer courses from 8:30 a.m. to 10:00 p.m. ay through Thursday and from 8:30 a.m. to 5:00 p.m. on Friday. nts admitted to a curriculum program may, upon the approval eir department head, register for any of these courses. Those students ssing a preference for either the day or the evening program may t to have their classes scheduled during these periods:

Day Classes:	8:30 - 9:23 a.m.
	9:30 - 10:23 a.m.
	10:30 - 11:23 a.m.
	11:30 - 12:23 p.m.
	12:30 - 1:23 p.m.
	1:30 - 2:23 p.m.
	2:30 - 3:23 p.m.
	3:30 - 4:23 p.m.
	4:30 - 5:23 p.m.
Evening Classes:	7:00 - 7:53 p.m.
	8:00 - 8:53 p.m.
	9:00 - 9:53 p.m.

ISTRATION PERIODS

Institute operates on a quarter system. Registration of new students l curriculum programs occurs at the beginning of the fall quarter in mber and any other quarter when there are sufficient students to begin gram.

tinuing students may consult the Institute calendar for specific dates bsequent registration periods.

NSFER CREDIT

Technical Institute of Alamance permits admission with advanced ing for transfer students from member institutions of the North

Carolina Department of Community Colleges, and other recognized approved institutions. Content of such courses must closely parallel t for which credit is sought at the Institute.

The Admissions Committee must approve all transfer credits, pric initial enrollment, and each application for transfer of credit will be uated according to the individual situation. Transfer courses will tra for credit only.

Candidates for a diploma or degree are normally expected to com one-half of their course work at this institution. Special cases will be consideration.

GRADING AND QUALITY POINT SYSTEM

The Technical Institute of Alamance operates on a quality point sy In the computation of a student's average, one quarter hour of work p at TIA with a grade of A, B, C, D, or F is given a numerical val 4, 3, 2, 1, 0 respectively, which is then multiplied by the number of qu hours represented by the course. The resulting product is the numb quality points earned for the course with the grade received.

The quality point average is determined by dividing the total q points earned in all courses by the total number of quarter credit scheduled including any courses failed.

GRADE		GRADE POINT EQUIVALEN
A—Excellent	93-100	4 quality points for each credit
B—Good	86-92	3 quality points for each credit
C—Fair	78-85	2 quality points for each credit
D—Passing	70-77	1 quality point for each credit
F—Failure	Below 70	0 quality points for each credit

I—Incomplete. This signifies that the student requires additional ti meet the objectives of the course. Credit may be earned and a p nent letter grade recorded when the student has performed add work as specified by the instructor. The work and the deadline completion must be stated in writing by the instructor with a copy to the student, the registrar, and the instructor. The grade of "I remain on the student's record until written notice for a change is by the instructor (or, in his absence, the Dept. Head) to the regis

WP—Withdrawn Passing. This signifies that the student has with from a course voluntarily with a passing grade during the through the ninth week of the quarter.

WF—Withdrawn Failing. This signifies that the student has with from a course with a failing grade during the fourth throu ninth week of the quarter. This designation means that the will not be computed in the quality point average.

Withdrawn. This signifies that the student has withdrawn during the first three weeks of the quarter.

Failure. This signifies that the student withdrew from a course with a iling grade during the tenth through the twelfth week, or failed the ntire course. Unique cases may be reviewed by the Administration.

-Audit. This signifies that the student has taken a course for no credit.

l final course grades will be a letter grade in accordance with the ted grading system. Students will receive reports at the end of each ter.

DUATION REQUIREMENTS

quirements for the degree or diploma will vary according to curricu- The student should refer to the catalog or brochure which applies to rogram so that he can determine the course requirements for gradua- All students must have a grade point average of 2.0 (C average) to be ple for graduation.

DENT'S RESPONSIBILITY FOR SECURING SPECIAL HELP.

s the student's responsibility to seek out extra help if needed. Instructors vailable for conferences but will not require that a person come in tra help. In all cases, an instructor will be more than willing to help, t is up to the individual student to ask.

HDRAWING FROM SCHOOL

fore withdrawing from school, a student should discuss the matter with dvisor or a counselor.

the event he finds it necessary to withdraw for any reason, he should:

. Obtain a clearance form from the General Office.
. Have the form signed by all his instructors, the librarian, and the business manager.
. Return the completed form to the General Office.

e failure to do this may result in the withholding of all information e student's file by the Student Personnel Office.

ITIONAL COURSE WORK

contact hours for each curriculum are minimal. It is a policy of nstitution to permit students to enroll in additional courses and/or atory work beyond those shown in the catalog. Appropriateness of e load is determined with the advisor or counselor assisting each stu- on an individual basis.

SPECIAL STUDENTS

Special students are those who are enrolled for course credit but
in a curriculum leading to the diploma or the associate degree. Stud
enrolled in this status will normally be required to meet the prerequis
for the course or to demonstrate a necessary level of competence by
appropriate test. Students enrolled on this basis must do so thro
arrangement with the Student Personnel Office.

PROVISIONAL STATUS STUDENTS

Students who have not completed placement tests or lack sufficient
for their file may be classified as provisional students. Those students on
status must complete all admission requirements following actual enrollm

AUDIT STUDENTS

A student may elect to audit a course or courses. Those auditing rec
no credit and do not have to take any examination; otherwise, participa
in class is on the same basis as a credit student. The fee for auditing is
same as the fee for credit.

COURSE LOAD

Students enrolled for 12 or more credit hours are classified as full-
students. Those taking less are classified as part-time. Normal course
will vary from one curriculum to another and should be carefully pla
with the Faculty Advisor. A student may enroll for maximum load dep
ing upon his capability as determined by his Faculty Advisor. A no
course load is outlined by departments in this catalog within specific
limits. A load less than that outlined will extend the time require
graduate.

Outside agencies require a certain number of contact hours for full b
fits (such as Social Security requires 20). See the section on Vete
Education Benefits in this catalog for requirements on load.

APPLICATION FOR DEGREE OR DIPLOMA

Students are required to apply as candidates for the diploma o
degree. This must be completed during the first two weeks of the
quarter of school attendance. This insures that the candidate's r
will be properly reviewed, and that he will be notified of any deficien

SELECTIVE SERVICE

The Selective Service makes provisions for those students who ain requirements to be deferred. The first requirement is enrollment in l time curriculum program (minimum 12 credit hours), and the second is satisfactory progress in the program. It is the responsibility of each student who is subject to the draft to complete the Deferment Certifi- provided by the Institute.

SS ATTENDANCE AND REGULATIONS

larity of class attendance is expected of all students. With each nce a student incurs the loss of some educational value.

following rules governing class absences will be strictly and fairly ced:

1. A student will not be penalized if absences do not exceed the number equal to the credit hours of the course. Days before and following legal holidays and vacation constitute two absences for each credit hour missed.

2. Each student is urged to use these absences *only* for the following reasons:
   (a) Illness of the student.
   (b) Death of a member of the immediate family (Parents, siblings, grandparents).

   When a student exceeds the allowed number of absences for a course, *he may be dropped by the instructor and the registrar will be notified.*

When an absence occurs on a day of a test, permission to take a make-up test will be granted at the discretion of the instructor. Students are responsible for arrangements of make-up tests within one week following an absence.

Students are responsible for obtaining all assignments and work covered during an absence.

A student should report illness in excess of one day to the Student Personnel Office.

Three tardies are counted as one absence. The first ten minutes of class constitutes a tardy; time thereafter is considered an absence.

Cases involving unusual circumstances may be reviewed by the Student Affairs Committee. *(Written request must be initiated by the student to the chairman of this committee).*

In cases when the instructor is not in class and other arrangements have not been made, the students are automatically dismissed after ten minutes. A roll must be signed by the students present and turned in by one of them to the General Office.

ACADEMIC PROBATION

A student must achieve a cumulative quality point average of at
2.0 in order to graduate. Failure to achieve a 2.0 quality point ave
(QPA) at the end of any quarter (for that quarter) will result in the stu
being placed on academic probation. The student will be notified
probationary status by letter and *will be required* to schedule per
conferences with a counselor or advisor.

A student on probation may remain in his program as long as his s
quent quarter's QPA meets the minimum of 1.50. If the subse
quarter's work should fail to meet this minimum, the student may
quired by his Department Head to drop certain courses or change
culum, and/or take remedial work. A student will be dismissed fro
school only if it is evident that he is unable to maintain progress aft
possible alternatives are exhausted.

Re-admittance at a subsequent quarter will be at the discretion
Student Affairs Committee. Students may appeal a decision of th
partment Head by letter to the Student Affairs Committee. Dec
of the Student Affairs Committee may be appealed by letter to the
of Trustees via the President of the Institute.

STUDENT CONDUCT

Students will be expected to conduct themselves at all times a
viduals of prudence and maturity. The rights and feelings of othe
be respected. Students shall demonstrate a high regard for school fa
and property and for the personal property of others.

School regulations which serve to control such activities as ve
traffic and parking, smoking, and other aspects of personal conduct
observed. Students may be suspended or dismissed for conduct
is considered incompatible with standards of propriety and good jud

Re-admittance of dismissed students at a subsequent session
at the discretion of the President. Students may appeal a suspens
dismissal decision by letter to the Board of Trustees via the Preside

DRESS

Neat and clean casual dress is considered appropriate at TIA.
shorts and bare feet are examples of inappropriate dress.

DISRUPTIVE POLICY

SEC. I-1 Definition of Disruptive Conduct

The Technical Institute of Alamance honors the right of free dis xpression, peaceful picketing and demonstrations, the right to petition eaceably to assemble. That these rights are a part of the fabric of this ution is not questioned. They must remain secure. It is equally clear, ver, that in a community of learning willful disruption of the educa- l process, destruction of property, and interference with the rights of members of the community cannot be tolerated.

) Any student, faculty member (including full-time or part-time instruc- or employee who willfully by use of violence, force, coercion, threat, idation or fear, obstructs, disrupts or attempts to obstruct or disrupt, ormal operations or functions of the Technical Institute of Alamance, ho advises, procures, or incites others to do so, shall be subject to nsion, expulsion, discharge, or dismissal from the Institute. The follow- vhile not intended to be exclusive, illustrate the offenses encompassed n: occupation of the Institute building or part thereof with intent to ve others of its use; blocking the entrance or exit of the Institute build- r corridor or room therein; setting fire to or by any other means sub- ially damaging building or property, or the property of others on the nical Institute premises; except as necessary for law enforcement, lisplay of or attempt or threat to use firearms or explosives or, for the se of intimidating, other weapons, in the Institute building or on the ute campus; prevention of the convening, continuation or orderly ct of any Institute class or activity or of any lawful meeting or assembly Institute building or on the Institute campus; inciting or organizing pts to prevent student attendance at classes; and, except with the ission of the President, blocking normal pedestrian or vehicular traffic e Institute campus.

) The possession of bowie knives, dirks, daggers, loaded canes, sword , machetes, pistols, rifles, repeating rifles, shotguns, pump guns, or firearms or explosives upon the Institute campus or in the Institute d or operated facility, unless explicitly permitted by the President or esignated representative in writing, is forbidden. Violation of this bition consitutes grounds for suspension from the Institute.

Any faculty member (including any full-time or part-time instructor) with intent to obstruct or disrupt the normal operations or functions of nstitute, willfully fails or refuses to carry out validly assigned duties be subject to discharge.

I-2 Responsibility of the President

en it appears that there is a violation of Sections I-1 (a), (b), or (c), it be the duty of the President, and he is fully authorized to act, to take ps which he deems advisable to protect the best interest of the Techni- stitute of Alamance, and to see that its Rules, Regulations and Policies nforced. He shall insure that any person or persons found guilty after ng shall be disciplined in such manner as may be warranted.

In carrying out these duties, the President may call upon any memb the Institute Administration, or member of the Faculty, and he may upon any agency created to deal with cases arising under Section I-1. viction in any State or Federal Court shall not preclude the Institute exercising its disciplinary authority in any offense under this or any section of the policy.

Subject to the provisions of Sections I-1 through I-4 of these polic shall be the duty of the President to exercise full authority in the re tion of student conduct and in matters of student discipline in the instit In the discharge of this duty, delegation of such authority may be ma the President to faculty committees and to administrative or other o of the institution, or to agencies of student government, in such m and to such extent as may by the President be deemed necessary and e ent; provided, that in the discharge of this duty it shall be the duty President to secure to every student the right of due process and fair he the presumption of innocence until found guilty, the right to kno evidence and to face witnesses testifying against him, and the right t advice and assistance in his own defense as may be allowable und regulations of the institution as approved by the President. In those ins where the denial of any of these rights is alleged, it shall be the duty President to review the proceedings.

SEC. I-3. Responsibility of the Trustees

The Trustees recognize that by statute they have the power to such rules and regulations for the management of the Institute as the deem necessary and expedient, not inconsistent with the constitution of the State, and policies of the State Board of Education. Whi Trustees fully appreciate their obligation in this respect, they recognize that in dealing with those offenses against the Institute d in Section I-1 (a), (b), or (c) hereof, they must impose the du authority of enforcing the policies set forth herein in the Chief Admi tive Office of the Institute — the President. It will be the responsibility Trustees to furnish all possible assistance to the President when req by him.

SEC. I-4. No Amnesty

No administrative official, faculty member, student, or employee Institute shall have authority to grant amnesty or to make any pro to prosecution or non-prosecution in any court, state, or federal, or any student, faculty, administrative, or Trustee committee to any charged with or suspected of violating Section I-1 (a), (b), or (c) Policies.

PRESIDENT'S LIST AND DEAN'S LIST

In order to honor outstanding students, the President's List n's List is published after each quarter. To qualify for the Dean's List, udent must take a minimum course load of 12 quarter credit hours and ntain a 3.3 quarter point average with no grades lower than a "C". To lify for the President's List, a student must take a minimum course load 2 quarter credit hours and maintain a 3.8 quarter point average with rades lower than "C".

NORS AT GRADUATION

raduating students who earn a Quality Point Average of 3.3 during the se of study will receive a degree or diploma with honors. Those earning uality Point Average of 3.8 will receive a degree of diploma with high ors.

COURSE NUMBERING SYSTEM

The following system established by the Department of Commu Colleges is used in designating the courses offered by the Instit

1. Each course is indicated by a three-letter prefix designating general subject area. The prefix for technical courses will be ceded by the letter "T".
2. A number follows the letter prefix to indicate a specific co within an area according to the following rules:

   Vocational courses are assigned numbers within the rang 1000 to 2000.

   Technical courses are assigned numbers within the rang 100 to 300.

   Adult Education courses beyond the high school level assigned numbers within the range of 2000 to 3000.

   Occupational Extension courses are assigned numbers withi range of 3000-4000.

   Special courses developed by the Institute for curriculum grams will be indicated by the letter "S" following an a priate prefix and number chosen according to the above

The Following is a List of the Abbreviations Used as Prefixes:

Air Conditioning, Heating & Refrigeration	AHR	Electronics	EL
		English	EN
Art	ART	Industrial Science	ISC
Automotive	AUT	Mathematics	MA
Business	BUS	Mechanical	MI
Chemistry	CHM	Nursing	NU
Commercial Art	CAT	Philosophy	PH
Dental	DEN	Physics	PH
Design	DES	Power Mechanics	PM
Drafting and Design	DFT	Political Science	PO
Economics	ECO	Psychology	PS
Electrical	ELC	Sociology	SC
Electronic Data Processing	EDP	Social Science	SS
		Welding	W

IV

expenses & fees

IV

GENERAL INFORMATION

In keeping with its philosophy, the Technical Institute of Alam seeks to provide quality education and training at the lowest cost poss

The state and federal governments provide funds for equipment services.

The local board of county commissioners provides funds to ac land, erect buildings, and to maintain and operate the buildings.

The distribution of operating costs are shared approximately as foll

State	81%
Local	8%
Student	11%

The eleven percent of cost assumed by the student is throug payment of tuition and fees.

FEES—TIME DUE AND DEFERRED PAYMENT

Tuition and activity fees, if applicable, are due and payable at the of the student's registration; however, in hardship cases a short-ter ferred payment or payment in installments may be made. Reques deferred payment or payment in installments must first be approved b Student Personnel Service office and then repayment schedules shall by the Business Office; provided, however, that no student sha permitted to graduate or to register for a new quarter if he has an u balance due on account from any previous quarter unless payment of outstanding balance has been guaranteed in writing by a financially re sible person or organization.

All checks and money orders should be made payable to Tec Institute of Alamance. A check given in payment of expenses wh returned by the bank creates an indebtedness to the Institute and jeopa the student's enrollment.

A student will not be allowed to graduate, receive a diploma or te, or a transcript of his record, nor will any information concerning record be forwarded to any other institution or other person as long as ccount is outstanding.

he student should arrange well in advance to pay all necessary expenses he day of registration.

TION—NORTH CAROLINA RESIDENT

he formula for equating credit-hour equivalency with credit hours for purpose of assessing tuition charges is as follows:

class hour = 1 credit hour
laboratory hours = 1 credit hour
shop hours = 1 credit hour

dit Hour Equivalency X $2.50 = tuition per quarter with a maximum of 00 for technical and vocational curriculum students.

L-TIME STUDENTS

ll vocational, technical, special, and audit students who are enrolled thirteen (13) or more credit hours are charged a maximum of $32.00 quarter; however, students enrolled for 12 credit hours or more are time students.

T-TIME STUDENTS

he tuition charge for curriculum credit students (and audit students) .50 times the number of credit hours for which the student is enrolled. mple: 9 credit hours X $2.50 = $22.50.

ABLISHMENT OF RESIDENCY

student who is not a legal resident of North Carolina must pay non- dent tuition. A person twenty-one years of age or older is not deemed ble for the resident rate of tuition unless he has established and ntained his legal residence in North Carolina for at least six months ediately preceding the date of his first enrollment in the Technical itute of Alamance. The legal residence of a person under twenty-one s of age at the time of his first enrollment in the Technical Institute of nance is that of his parents, surviving parent, or legal guardian. If parents are divorced or legally separated, the legal residence of the er will be considered the residence of the student unless custody of minor has been awarded by court to the mother or to a legal guardian r than a parent. No claim of residence in North Carolina based upon residence of a guardian will be considered if either parent is still living, unless the action of the court appointing the guardian precedes student's first enrollment at the Technical Institute of Alamance by at l twelve months.

When the resident status of a student is determined at the time of first enrollment, it may not thereafter be changed except (a) in the of a non-resident minor student whose parents subsequently estab legal residence in North Carolina; and (b) in the case of a resident stud or his parents, who cease to be residents of North Carolina.

The legal residence of a wife follows that of her husband except a woman student enrolled in the Institute as a resident may continu a resident, even though she marries a non-resident.

One does not acquire the status of a resident of North Carolina by re of being stationed in the State while in military service.

Ownership of property, payment of state or local taxes, or registra of an automobile in the state, apart from legal residence, will not qu one for the resident rate of tuition.

Students who are in doubt as to their status as a resident should req clarification by writing to or consulting the Business Manager be registration.

OUT-OF-STATE TUITION (Non-Resident)

Any student whose legal residence is outside of North Carolina pay tuition fees two and one-half times the in-state resident rate. Stud living with relatives in this state whose parents or guardian live out North Carolina will pay tuition fees two and one-half times the in- resident rate.

FULL-TIME NON-RESIDENT

Non-resident students taking thirteen (13) or more credit hours of will be charged a maximum of $80.00 per quarter tuition for vocational technical curriculum programs.

PART-TIME NON-RESIDENT

Those taking twelve (12) or less credit hours of work per quarter wi charged $6.25 times the number of credit hours enrolled.

Audit and Special Students, who are non-residents, will be charg the same rate as the non-resident curriculum student.

ACTIVITY FEE

An Activity Fee of $2.00 per quarter is required of all curric

lents enrolled for twelve (12) or more credit hours. The fee is charged
ne beginning of each quarter and is payable by both resident and non-
dent students. These fees to be used at the discretion of the Student
ncil for such purposes as a school newspaper, dances, picnics, etc.
; fee is not refundable.

RRICULUM PROGRAM LATE REGISTRATION FEE

o prevent or reduce the problems incident to late registration, registra-
schedules are set for specific days and certain definite procedures are
iired.

student has not completed registration until all of the required steps
taken. It is the student's responsibility to seek and then to follow the
essary procedures.

ny student who fails to complete registration for all classes and to
e the required payment of expenses and fees on the prescribed
stration day according to the official school calendar will be charged
te registration fee of $5.00. This applies to all curriculum students
n no exception—day, evening, full-time, part-time, special, and audit
ollees.

hose with anticipated financial difficulties should contact the personnel
e, in person, well in advance of the registration deadline.

FUND POLICIES

h Refund

uition refund for students shall not be made unless the student is,
ne judgment of the institution, compelled to withdraw for unavoidable
ons. In such cases, two-thirds (⅔) of the student's tuition may be re-
led if the student withdraws within ten (10) calendar days after the
day of classes as published in the school calendar, provided the stu-
t completes the "Request for Refund" form within thirty (30) days after
ially withdrawing from school. Tuition refunds will not be considered
r that time. Tuition refunds will not be considered for tuitions of Five
lars ($5.00) or less, unless a course or curriculum fails to materialize
to no fault of the student. EXCEPTION: Those students who are
rans or war orphans receiving benefits under U. S. Code, Title 38,
pter 33 and 35 may be refunded the *pro rata* portion of the tuition
not used at the time of withdrawal of such students.

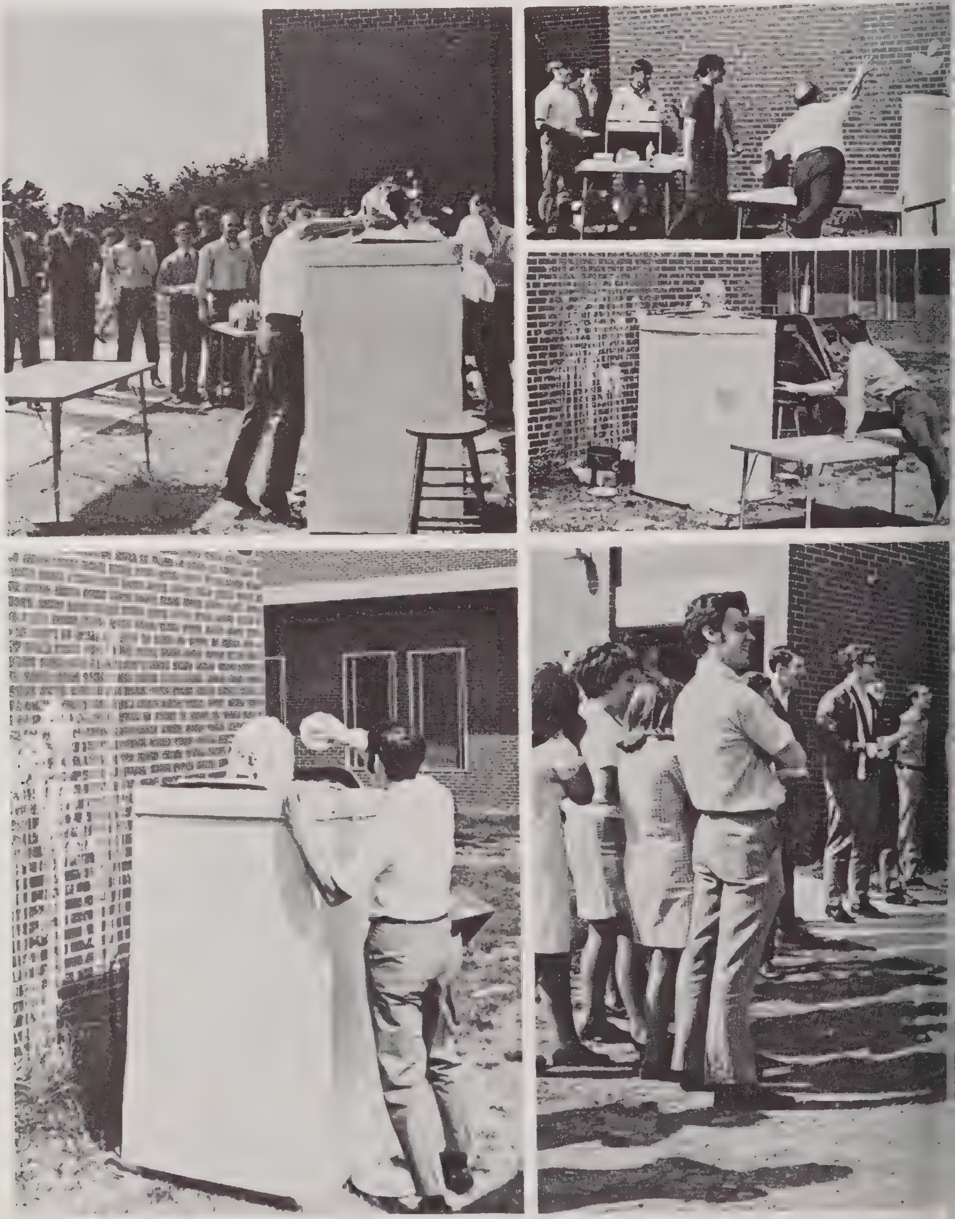
here is no refund on payments for activity fees, insurance premium
and special fees such as late registration.

all refund cases, the student must initiate his withdrawal through
Student Personnel Office. The Business Office will make the allowable
nd only after written request has been received from the Personnel

Office with approval by the Director of Student Personnel and the Stude
Department Head.

Credit for Unrefunded Tuition and Fees

Where a student, having paid the required tuition and fees for a qua withdraws from the institution before the end of the quarter and the rea for the withdrawal are found excusable, the student may be allowed cr for unrefunded tuition and fees if he applies for re-admission during an the next four calendar quarters and petitions in writing to be allowed s credit.



OKS AND SUPPLIES

All of the student's necessary textbooks can be acquired from the Insti- e's bookstore. Drawing supplies, slide rules, nursing caps, nurses and ntal assistant pins, composition books, pens, pencils, decals and other scellaneous items are also available in the bookstore.

The bookstore is operated on a strictly cash basis and there is no refund books or supplies. It would be to the student's advantage to meet each ss at least once before attempting to purchase texts and materials.

ome textbooks cost as little as $1.25 and others as much as $15.00, t the average cost of each book is approximately $8.00. Most students uld anticipate spending an average of approximately $40.00 per quarter books, supplies, and materials. The total cost varies according to the ticular program. The nursing, drafting and commercial art programs quire special items and/or instructional kits which may vary from arter to quarter.

IFORM DEPOSIT (Nursing Students Only)

Nursing students are required to make a $20.00 uniform deposit payable the General Office during the first quarter.

The uniform deposit entitles each nursing student to the use of three sets of uniforms and two (2) caps. (Caps are sold in the Institute's book- tre to licensed practical nurses who have graduated from the Technical titute of Alamance.)

hould the student complete the requirements for graduation and re- n all uniforms in satisfactory condition, the $20.00 may at the request the student, be paid to the State Nursing Board to cover the required t of taking the examination which enables practical nurses to become ensed. This deposit is refundable to those who leave school and return all forms in satisfactory condition.

SURANCE

Accident insurance, covering hours in school and transportation to and m school, is available for $3.50 per year. Students desiring this insurance y make payment to the General Office after registering for the Fall arter and at other designated times. It is not refundable.

Neither the Institute nor the State of North Carolina carries insurance cover any student for accidents or otherwise. Therefore, students en- ded in all shops and labs are particularly urged to take advantage of insurance.

TYPICAL FALL QUARTER EXPENSES

	N. C. Resident	Non-Reside
Tuition	$32.00	$ 80.00
Activity Fee	2.00	2.00
Insurance (Optional)	3.50	3.50
Books and Supplies (Estimate)	40.00	40.00
TOTAL	$77.50	$125.50

TYPICAL SPRING QUARTER EXPENSES

	N. C. Resident	Non-Reside
Tuition	$32.00	$ 80.00
Activity Fee	2.00	2.00
Books and Supplies	40.00	40.00
TOTAL	$74.00	$122.00

Students in the curriculums or programs listed below will have a tional expenses as indicated:

Practical Nursing—$20.00 (Uniform Deposit)—1st Quarter
Commercial Art—$50.00 (Drafting Kit & Supplies)
Drafting—$30.00 (Drafting Kit & Supplies)

TRANSCRIPT FEE

The first transcript is free. After the initial transcript is issued, a $1.0 will be charged for each subsequent transcript.

V

student services

V

STUDENT SERVICES

The Technical Institute of Alamance recognizes its commitment to ea student. The Student Personnel Program is carefully planned to ass students in meeting their educational and vocational goals.

The main purpose of these services, individually and as a whole, help t student in making the most of his educational opportunity. The Stud Personnel Services are organized to assist students in moving from o level of achievement to another. Many services are available to the stud through the Student Personnel Office: counseling, testing, orientation, pla ment, and financial aid are the basic services. Emphasis by counselors placed on self-understanding, personal growth, and assistance in achievi economic self-sufficiency in a job reasonably appropriate to abilities a satisfying to individual interests.

The various student affairs, such as Student Council and other stud activities, are provided to help promote maximum learning opportuniti Student services are conducted in a friendly atmosphere so that perso integrity and group morale will be preserved and enhanced.

COUNSELING

A staff, which includes counselors with specialized training, provi appropriate counseling services as indicated by the student's needs.

Admissions counseling is provided to assist students in understand the various types of programs available at the Institute and to cla entrance placement and prerequisites. Additional counseling is provide help those students who wish assistance in regard to the actual select of an educational objective or field of study. Background, aptitudes, c rent employment trends, and other factors pertaining to the selection c career are considered in depth. Personal counseling based on individ need is also available.

ACEMENT SERVICE

mployment opportunities are made available as another service of institution. Prospective employers visit the campus to recruit in the itution. Students are assisted in making contacts with future employers. ormation is available regarding trends of employment, data about ries, and a file kept up-to-date on prospective employers and employ- nt.

he Student Personnel Office, however, does not guarantee employment. objective of this service is to guide and assist the student in obtaining type of position for which he has been best qualified.

DENT HOUSING

he Institute does not have dormitory facilities and does not assume ponsibility for housing. However, Burlington residents do voluntarily r housing facilities. Costs will vary between $8 and $16 per week accord- to livability and convenience. Students are urged to make early plans housing and investigate before enrollment date.

VISING

t the time of enrollment, each student is assigned a faculty advisor. e of the objectives of the advisor is to assist students in planning their grams and selecting courses so that appropriate progress will be lized. The advisor also approves quarterly schedules. The advisor also os to identify students who need specialized counseling services. Each dent is expected to be fully responsible and cognizant of his status in program in relation to the standards of the Institution. Therefore, each lent is expected to seek out his advisor and rely upon him for services needed.

NANCIAL AID SERVICE

ssistance is made available to students in meeting their financial needs school attendance. Where possible, this is done through a program of ncial aid which may include several forms of assistance.

he Institute serves as a referral and information agency for the following ources:

A. Veterans Benefits
B. Social Security Agency
C. Department of Public Welfare
D. Employment

The Institute serves students directly as a disbursing agency for following:

- A. Scholarships
  - 1. Nursing Student Scholarships
- B. Work Study Programs
- C. Loans
  - 1. College Foundations
    - A. Insured Loan Program
    - B. Bryan Foundation
    - C. Picket and Hatcher Foundation

Students must be accepted before application is made for financial The financial aid program is generally based on need and scholars Applications for financial aid may be obtained from the Student Perso Services Office. Since there is time involved in processing of an applicat advanced planning must be made.

ORIENTATION FOR FRESHMEN AND TRANSFER STUDENTS

The purpose of the orientation program is to introduce the studen the administrative personnel, faculty, and student leaders. The rules, cies and privileges of the Institute are discussed as contained in the dent Handbook. All new freshmen and transfer students are require attend the sessions as scheduled.

TUDENT ACTIVITIES

The Technical Institute of Alamance provides a wide variety of extra-urricular and co-curricular activities for students. The Institute believes at such activities contribute significantly to the student's personal and ducational development. Student clubs such as service clubs, choral roups, sports, newspaper, and others offer opportunities for students to xpress and develop special interests. Interested persons may inquire of ny counselor or Student Council member for information.

TUDENT COUNCIL

The Student Council is the recognized student organization which shall rovide means for responsible and effective student participation in the rganization and control of student affairs. All clubs and organizations are artered through the Student Council. The Student Council assists in stablishing procedural guides for creating new organizations for students. he Student Council endeavors to reflect the individual thinking, the in-grity and the interest of the students within the Technical Institute of lamance. This representative council is composed of elected representa-ves from each curriculum. Officers of the council are elected by the udent body at large.

ETERANS EDUCATION BENEFITS

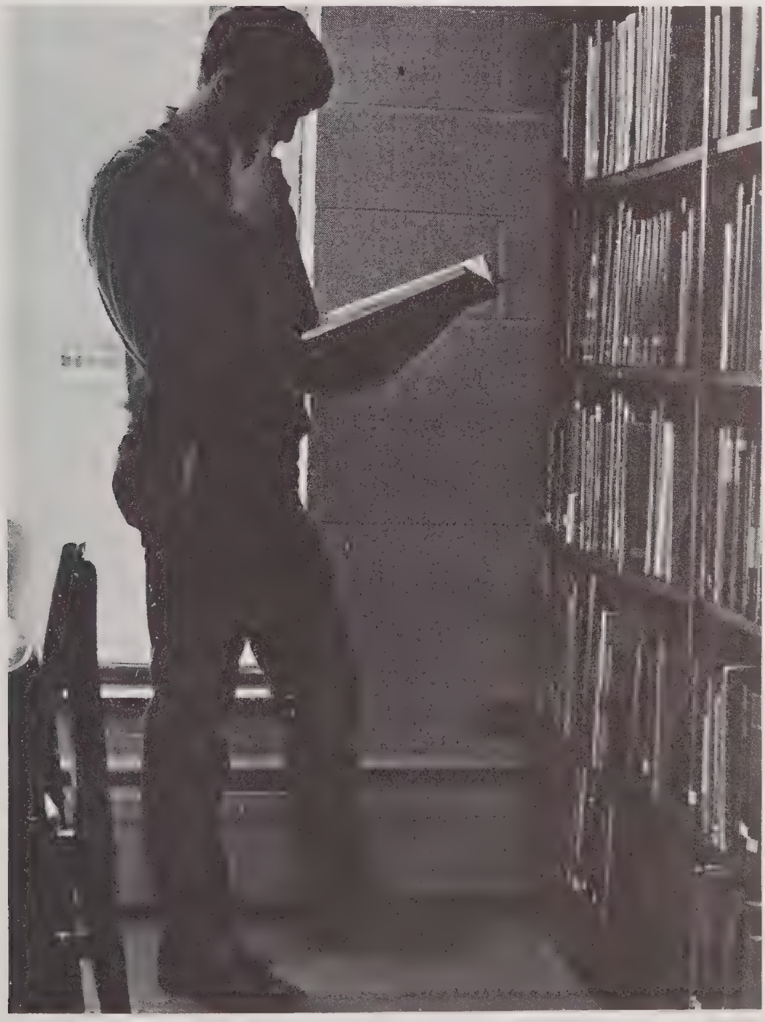
The Technical Institute of Alamance is approved by the Veterans dministration for students who are eligible under the law. Eligible ersons for benefits are urged to take advantage of the guidance service nd educational facilities of the Institute. Veterans and dependents or udents who expect to enroll under the War Orphans Educational Assistance ct should contact their Veterans Service Office in advance of registration.

For veterans enrolled under the G. I. Bill, in order to receive full benefits, e required to carry a full load of class work. A full load for a student in a vo-year degree program is a minimum of 14 credit hours; or a student in one-year diploma program, a full load is 30 clock hours.

TUDENT LOUNGE

The Student Lounge is located centrally in the building and is open all students as a place for relaxation and refreshments. A variety of ft drinks, along with coffee, candy, and sandwiches are available at e snack bar. Smoking is permitted only in the lounge.

VI
learning resources



VI

LEARNING RESOURCES

Learning to appreciate and use the library is an important part of e individual's education. The Technical Institute of Alamance recognizes as a significant factor in all of its programs. Every effort has been mad supply the best possible resource material and a competent staff to these needs for the student, the faculty, and the community.

The collection of books and materials is open-shelf and open-stack. easy access to books fosters an informal working atmosphere which courages the student to read and study. Students, who are urged to initiative in reading and research, find an environment where they see knowledge is not confined to disciplines or compartments but continues one field to the next. In this situation, students usually learn more qu when they can turn readily from the examimation of one book to the ex nation of others related to their immediate interest. The book colle of about 12,500 volumes is growing at the rate of 2,000 yearly.

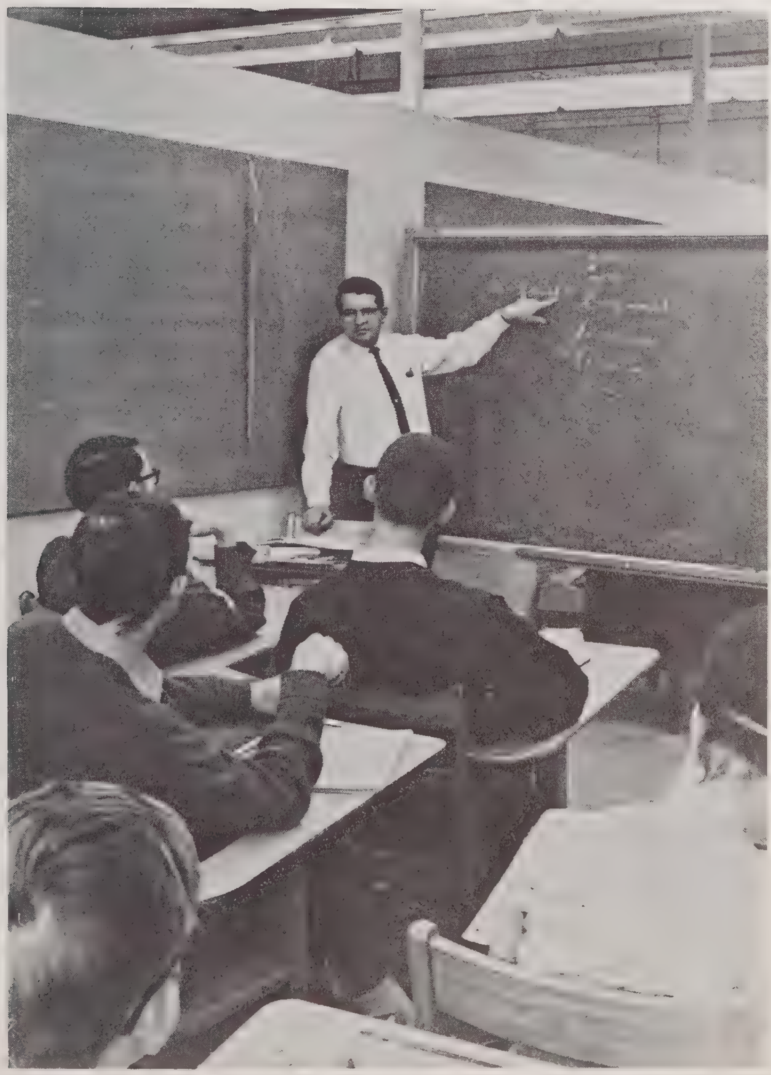
TIA subscribes to approximately over 200 well-chosen periodicals w represent and support the curriculum. Those which are indexed in Rea Guide, Applied Science and Technology, and Business Periodical Ind are either bound or microfilmed each year for permanent use. T periodicals are useful in locating the most recent information on a partic subject.

The Learning Resource Center, through film rental agencies, sup film for classroom use. Film use provides another dimension to the i vidual's learning. The student has access to a select collection of s 8mm film loops, which may be viewed at his convenience to reinforce concepts learned in the classroom. The student may have access to projectors on request.

In order that the student make full use of the total resources of TI orientation film on Library use is provided with the class instructor ser as the person best qualified to introduce the student to the literatu his particular field. Students are urged to ask for help when they fee need of it.

VII

developmental studies



VII

DEVELOPMENTAL STUDIES

The Developmental Studies Program serves students needing a m concentrated approach to the basic skills of Mathematics, Reading, English than they would receive in the regular English and Mathema courses. The primary differences between the developmental and reg courses are time spent in class and individualized instruction recei *Credit will be awarded* upon successful completion of the developme courses.

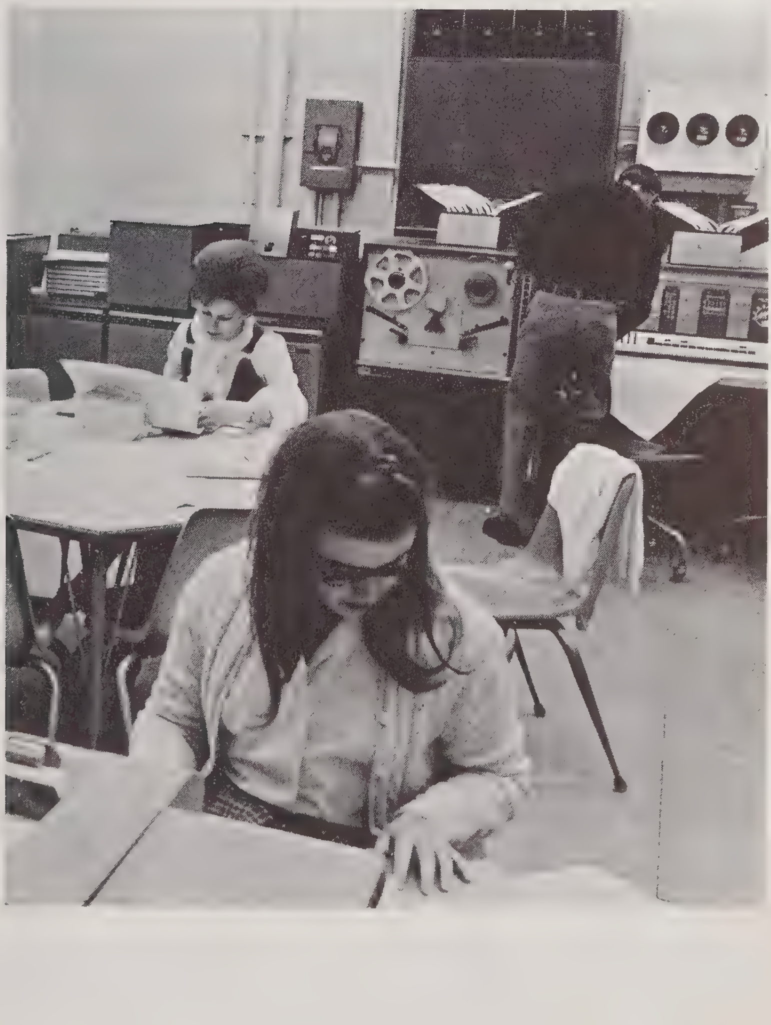
The philosophy of the program is that not all students progress at same rate; therefore, through individualized instruction, program instruction, and individual rates of program, the student should succ fully master the fundamentals he is striving toward. The numbe quarters a student may spend in the developmental courses will vary at the end of one quarter's work, he has not completed the requirement that particular course, he will receive a grade of "Incomplete" and cont his work the next quarter.

A student may stay in a developmental sequence of courses as long a needs the extra time and individual instruction to complete a "nor quarter's work.

Developmental courses will be indicated by a prefix of "D" added t course number.

VIII

programs of study



VIII

PROGRAMS OF STUDY

The Technical Institute of Alamance offers the following program study:

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

Applied Arts

- Commercial Art and Advertising Design
- Technical Illustration

Business Technologies

- Business Administration
- Business Data Processing
- General Office Technology
- Medical Secretary
- Scientific Data Processing
- Technical Secretary

Engineering Technologies

- Air Conditioning and Refrigeration
- Chemical Technology
- Drafting and Design Technology
- Electronics

DIPLOMA PROGRAMS

Health Occupations

- Dental Assisting
- Practical Nursing

Mechanical Occupation

- Air Conditioning and Refrigeration Mechanics
- Automotive Mechanics
- Machinist Trade
- Mechanical Drafting

associate in applied science degree programs

ASSOCIATE DEGREE PROGRAMS

(TWO YEARS)

ADMISSION REQUIREMENTS

Minimum Admission Requirements

Requirements for admission of a candidate to the two-year associate de programs include the following qualifications. The candidate:

1. Must be a high school graduate or have a State-approved equiv education.
2. Must submit the transcripts of high school and post-high s education.
3. Must demonstrate aptitude for desired training as determine standard tests.
4. Must be in acceptable condition of physical and mental h Medical examination may be required at the discretion o administration.
5. Must be required to have an interview with a designated repres tive for discussing enrollment plans and lifetime career goals.

In addition to the above minimum admission requirements, more sp prerequisites are necessary in some programs.

Two units of Algebra or one unit of Algebra and one unit of Plane Geo are required in the following programs:

Air Conditioning and Refrigeration Technology
Business Data Processing
Chemical Technology
Drafting & Design Technology
Electronics Technology
Scientific Data Processing

It is suggested that students should have completed one unit of ph science with laboratory.

Facilities are available at the Institute for removal of academic defici

Applied Arts

commercial art & advertising design

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ose of Curriculum

rveys have shown an increase in the demand for graduates possessing
ing in the field of Commercial Art and Advertising Design. The cur-
um will prepare a graduate with a sound, well-rounded background for
ical and creative achievement throughout his professional life. Design
illustration for commerce is continually advancing its standards, there-
the background offered the student must be well-developed to prepare
for performance on a contemporary professional level. Graduates of this
ram will have an adequate background in illustration, layout and letter-
design, and production enabling them to be employed in some facet of
mercial Artistry.

uipped with professional competence and the potential for continuing
th and improvement, graduates are qualified for employment in ad-
sing agencies, design studios, department stores, industrial advertising
rtments, government agencies, newspapers, television studios, printing
publishing houses.

Description

e commercial artist or advertising designer creates and designs layouts
illustrations for printing, creates posters, signboards, billboards, and
crads. He may design and prepare charts, diagrams, sketches, and
for publication and exhibition, perform responsible illustrative work
ackage design, photography, lettering, and art work for the printing
sses. Opportunities for graduates of this program may be in advertising
cies, newspapers and magazines, television studios, industrial advertis-
departments and design studios, department stores, government agen-
or in printing and publishing houses.

COMMERCIAL ART AND ADVERTISING DESIGN

Minimum Admission Requirements

Requirements for admission of a candidate to the two-year associa gree in the Commercial Art program includes the following qualifica The candidate must:

1. Be a high school graduate or have a State-approved equivalen cation.
2. Submit the transcripts of high and post-high school educatio
3. Demonstrate aptitude for desired training as determined by ard tests. These tests will aid in student selection, placemen guidance. Institution guidance and counseling will be availa the student throughout his education, not just at the time of rollment.
4. Be in acceptable condition of physical and mental health. M examination may be required at the discretion of the administ
5. Have an interview with a designated representative for disc enrollment plans and lifetime career goals.
6. Draw the following on appropriate 8½" by 11" paper. Do n oil paint, illustration board, mats, or frames of any kind. Pe ink, tempera, wash, water colors, conte crayon and pastels (fixative) may be used.
   - A. A picture representing "An Exciting Event in My Life".
   - B. A self portrait.
   - C. One of the following:
     1. Design a travel poster and give the information whi consider relevant.
     2. Design and render in perspective a product such automobile, home appliance, or telephone.

It is suggested that students should have completed one unit of p science with laboratory.

Facilities are available at the Institute for removal of ac deficiencies.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			C
T-ENG	101	Composition I	3
T-DFT	101	Technical Drafting	2
T-CAT	101	Advertising Principles	3
T-CAT	105	Life Study	0
T-CAT	121	Commercial Art and Advertising Design	3
			—
			11

°"Manipulative laboratory" involves development of skills and job proficiency. one quarter hour for each three hours of laboratory.

C =Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

COMMERCIAL ART AND ADVERTISING DESIGN

d Quarter

			C	L	CH
G	102	Composition II	3	0	3
T	102	Technical Drafting	2	4	3
T	110	Business Mathematics	5	0	5
T	106	Life Study	0	6	2
T	122	Commercial Art and Advertising Design	3	6	5
			13	16	18

Quarter

			C	L	CH
G	103	Report Writing	3	0	3
T	116	Photography	2	6°	4
T	123	Commercial Art and Advertising Design	3	9°	6
T	106S	History of Art I	4	0	4
T	107S	History of Art II	4	0	4
			12	15	17

h Quarter

			C	L	CH
G	204	Oral Communication	3	0	3
T	205	Advertising Copywriting	3	0	3
T	212	Advertising Illustration	1	3	2
T	224	Commercial Art and Advertising Design	3	9	6
T	107S	History of Art II	4	0	4
			14	12	18

Quarter

			C	L	CH
		Social Science Elective	3	0	3
T	213	Advertising Illustration	1	3°	2
T	217	Photography	2	6°	4
T	225	Commercial Art and Advertising Design	3	6	5
		Elective	4	0	4
			13	15	18

Quarter

			C	L	CH
		Social Science Elective	3	0	3
	214	Advertising Illustration	1	3°	2
	226	Commercial Art and Advertising Design	3	9°	6
	235	Advertising Art Direction	5	0	5
		Elective	3	0	3
			15	12	19

Total 106

ipulative laboratory” involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory.

ss Hrs. Per Week L=Lab Hrs. Per Week CH=Credit hrs. Per Qtr.

ELECTIVES

Electives for the **Commercial Art & Advertising Design Curriculum** may be se from the following courses. The school will determine which of these are to be in any given quarter of the program.

			C	L
T-BUS	232	Sales Development	3	
T-CAT	231	Painting with Polymers	2	
T-ENG	206	Business Communication	3	
T-PSY	221	Psychology of Color	3	
T-SSC	201	Social Science	3	
T-SSC	202	Social Science	3	
T-PSY	206	Applied Psychology	3	
T-ECO	102	Economics	3	
T-SSC	205	American Institutions	3	
T-POL	201	United States Government	3	
T-CAT	240	Metal Sculpturing	1	
T-CAT	239	Selective Media	2	

technical illustration

ose of Curriculum

e purpose of the illustrator is to provide communication between ieers who design equipment and those who use or service the products. rations may appear in industrial catalogs, aircraft handbooks, training engineering designs and tooling problems, assembly sheets, and pro- nal literature. They are generally drawn by one of the axonometric or ective methods and may show part details, cutaway views, exploded iblies, or part installations.

American industry has grown, technical illustrators have become important in providing illustrations to solve a great number of prob- in design, manufacturing, assembly, operation, and maintenance of ical equipment. By the use of an illustration which is normally superior e spoken or written word, illustrators can convey the information sary to give a clear and concise description of a complicated form. ictorial language is becoming more necessary because of the steadily ising complexity of the machines of modern living. Technical illustra- ias evolved into an occupation that makes an important contribution lustry and to the stength of the nation.

escription

technical illustrator has the ability to describe the shape, dimensions, bly, and installation of an object. Information for illustrations is taken blueprints, technical sheets, engineering sketches, photographs, or tual parts. The technical illustrator must be able to visualize this cal data in three dimensions, judge what the best methods of presenta- re, plan his layout, make an accurate drawing, and finish this drawing ling to the commercial or military specifications to which he is work- addition to being technically and artistically correct, the drawing ilso be done within acceptable time limits.

He may lay out and draw schematic, perspective, orthographic, o torial views to depict function, relationship, and assembly sequer parts and assemblies, such as gears, mechanisms, and instrument shades or colors drawings to emphasize details or to eliminate und background, using ink, crayon, airbrush, and overlays. Pastes instru and comments in position on drawing. May draw cartoons and caric to illustrate operations in maintenance, and safety manuals or poster

In most illustration departments, a new employee begins with the s jobs and progresses to the most difficult ones as he gains confidenc experience.

Minimum Admission Requirements

Requirements for admission of a candidate to the two-year associa gree in the Technical Illustration program includes the following c cations. The candidate must:

1. Be a high school graduate or have a State-approved equi education.
2. Submit the transcripts of high and post-high school educa
3. Demonstrate aptitude for desired training as determined by ard tests. These tests will aid in student selection, placemer guidance. Institution guidance and counseling will be avail the student throughout his education, not just at the time enrollment.
4. Be in acceptable condition of physical and mental health. M examination may be required at the discretion of the adminis
5. Have an interview with a designated representative for dis enrollment plans and lifetime career goals.
6. Draw the following on appropriate 8½" by 11" paper. Do oil paint, illustration board, mats or frames of any kind. P ink, tempera, wash, water colors, conte crayon and pastels fixative) may be used.
   - A. A picture representing "An Exciting Event in My Life
   - B. A self portrait.
   - C. One of the following:
     - (1) Design a travel poster and give the information you consider relevant.
     - (2) Design and render in perspective a product suc automobile, home appliance, or telephone.

It is suggested that students should have completed one unit of science with laboratory.

Facilities are available at the Institute for removal of acader ciencies.

TECHNICAL ILLUSTRATION

SUGGESTED CURRICULUM BY QUARTERS

Quarter

	C	L	CH
G 101 Composition I	3	0	3
T 101 Technical Drafting	2	4°	3
T 101 Advertising Principles	3	0	3
T 105 Life Study	0	6°	2
T 121 Commercial Art & Advertising Design	3	6°	5
	11	16	16

d Quarter

	C	L	CH
G 102 Composition II	3	0	3
T 102 Technical Drafting	2	4°	3
T 100 Fundamentals of Mathematics	5	0	5
S 105 Technical Sketching	0	6°	2
T 122 Commercial Art & Advertising Design	3	6	5
	13	16	18

Quarter

	C	L	CH
G 103 Report Writing	3	0	3
S 115 Art Appreciation	4	0	4
C 101 Machine Processes	0	6°	2
S 150 Technical Illustration I	3	9°	6
	10	15	15

Quarter

	C	L	CH
G 204 Oral Communication	3	0	3
T 204 Descriptive Geometry	2	4	4
T 116 Photography	2	6°	4
Elective	1	3	2
S 251 Technical Illustration II	3	6°	5
	11	19	18

Quarter

	C	L	CH
Social Science Elective	3	0	3
T 217 Photography	2	6°	4
Y 221 Psychology of Color	3	0	3
S 252 Technical Illustration III	3	6°	5
Elective	1	3°	2
	12	15	17

ipulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laboratory.

lass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Sixth Quarter	C	L
Social Science Elective	3	
T-DES 256 Seminar Technical Illustration	3	
T-DES 253 Technical Illustration IV	3	
Elective	5	
	14	

Total

ELECTIVES

Electives for the **Technical Illustration Curriculum** may be selected from the fol courses. The School may determine which of these are to be offered in any given of the program.

TECHNICAL ILLUSTRATION

COURSE TITLE			C
T-DES	260	Technical Rendering	1
T-DES	262	Technical Publications	1
T-ELN	110	Introduction to Electronics	3
T-DES	280	Special Projects	1

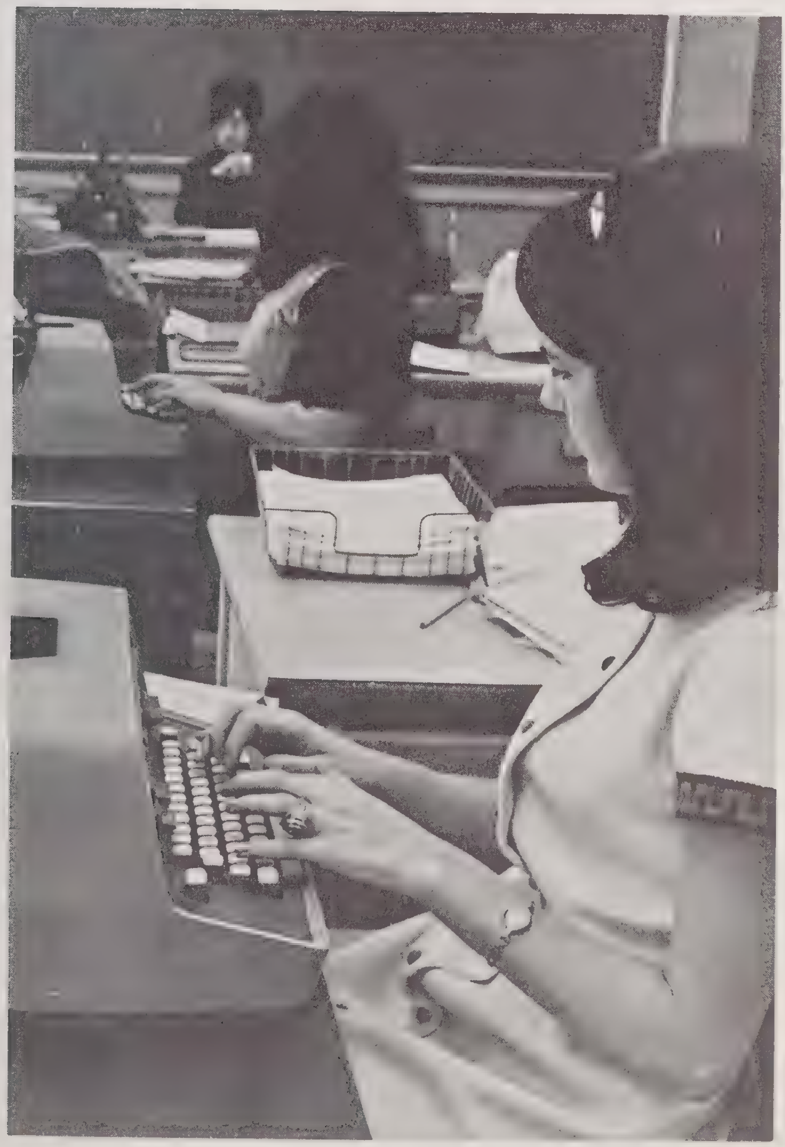
SOCIAL SCIENCE

T-SSC	201	Social Science	3
T-PSY	206	Applied Psychology	3
T-ECO	102	Economics	3
T-SSC	205	American Institutions	3
T-POL	201	United States Government	3

°"Manipulative laboratory" involves development of skills and job proficiency of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

Business Technology



business administration

ose of Curriculum

North Carolina the opportunities in business are increasing. With the easing population and industrial development in this State, business become more competitive and automated. Better opportunities in ness will be filled by students with specialized education beyond the school level. The Business Administration Curriculum is designed to are the student for employment in one of many occupations common to ness. Training is aimed at preparing the student in many phases of inistrative work that might be encountered in the average business.

e specific objectives of the Business Administration Curriculum are to lop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding our economy through study and analysis of the role of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.
4. Understanding and skill in effective communication for business.
5. Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

Description

he graduate of the Business Administration Curriculum may enter a ty of career opportunities from beginning sales person or office clerk to ger trainee. The duties and responsibilities of this graduate vary in rent firms. These encompassments might include: making up and filing rts, tabulating and posting data in various books, sending out bills, king calculations, adjusting complaints, operating various office ma- s, and assisting managers in supervising. Positions are available in esses such as advertising; banking; credit; finance; retailing; whole- g; hotel, tourist, and travel industry; insurance; transportation; and nunications.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L
T-ENG	101	Composition I	3	
T-BUS	115	Business Law	3	
T-BUS	102	Typewriting I	2	
T-MAT	110	Business Mathematics	5	
T-BUS	101	Introduction to Business	5	
			18	

Second Quarter

			C	L
T-ENG	102	Composition II	3	
		Business Elective	3	
T-BUS	120	Accounting	5	
T-ECO	102	Economics	3	
T-BUS	116	Business Law	3	
			17	

Third Quarter

			C
T-ENG	204	Oral Communication	3
T-BUS	121	Accounting	5
T-ECO	104	Economics	3
T-EDP	103S	Concept of Data Processing	4
T-BUS	110	Office Machines	2
			17

Fourth Quarter

			C
T-ENG	103	Report Writing	3
T-BUS	239	Marketing	5
T-BUS	123	Finance	3
T-BUS	272	Supervision	3
		Business Elective	3
			17

Fifth Quarter

			C
T-ENG	206	Business Communication	3
T-BUS	243	Advertising	4
T-BUS	235	Business Management	3
T-BUS	124	Finance	3
T-Social Science Elective			3
			16

°"Manipulative laboratory" involves development of skills and job proficienc of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

h Quarter

			C	L	CH
US	229	Taxes	3	2	4
US	271	Office Management	3	0	3
US	232	Sales	3	0	3
ocial Science Elective			3	0	3
		Business Elective	4	0	4
			16	2	17
		Total		106	

ELECTIVES

ectives for the **Business Administration Curriculum** may be selected from the wing courses. The school will determine which of these are to be offered in any n quarter of the program.

BUSINESS ADMINISTRATION

	C	L	CH
JS 247 Business Insurance	3	0	3
JS 219 Credit Procedures and Problems	3	0	3
JS 255 Interpreting Accounting Records	3	0	3
JS 233 Personnel Management	3	0	3
JS 245 Retailing	3	0	3
JS 237 Wholesaling	3	0	3
JS 266 Budget and Record Keeping	3	0	3
JS 217 Business Law	3	0	3
JS 300S Current Trends in Business	2	4	4
S 112 Filing	3	0	3

SOCIAL SCIENCE

			C	L	Cr
C	201	Social Science	3	0	3
C	202	Social Science	3	0	3
C	205	American Institutions	3	0	3
L	201	United States Government	3	0	3
Y	206	Applied Psychology	3	0	3

business data processing

Purpose of Curriculum

The processing of data by electronic equipment has created vast ch in business and industry. Nowhere are these changes more apparent tl the occupations associated with the handling of business information. of the routine and time-consuming work of obtaining, compiling and r ing the information necessary for a business to operate can now be ad to machine processing.

This curriculum is designed to give the student (1) an understand the principles of business operation, (2) experience with technique handling business data, and (3) functional competence in the applicat data processing systems, and experience in computer programmi business records and accounts, inventory, sales, and income and ex tures essential to business and to management decisions.

Emphasis is upon business data processing and use of machines in s business problems.

Job Description

The business data processing specialist applies currently availabl gramming techniques to a defined problem with minimum supervisi analyzes and defines systems requirements to develop a progra electronic data processing; conducts detailed analyses of systems re ments, and develops all levels of block diagrams and logical flow Translates program details into coded instructions; establishes test tests, refines, and revises program and documents the procedures. Asc if other combinations of instruction would achieve greater flexibility, machine utilization, or more dependable results. He may prepare a plete set of operating instructions for use by a console operator; on oc operates the console in processing program.

SUGGESTED CURRICULUM BY QUARTERS

t Quarter

			C	L	CH
DP	103	Introduction to Computer Concepts	4	0	4
DP	110	Functional Wiring	3	2	4
AT	101	Technical Mathematics	5	0	5
NG	101	Composition I	3	0	3
			15	2	16

ond Quarter

			C	L	CH
DP	114	Compiler Language I	2	4	4
AT	112	Business Mathematics	5	0	5
US	120	Accounting I	5	2	6
NG	102	Composition II	3	0	3
			15	6	18

rd Quarter

			C	L	CH
DP	116	Assembly Language	2	4	4
US	121	Accounting II	5	2	6
AT	214	Statistics	5	0	5
NG	103	Technical Report Writing	3	0	3
			15	6	18

rth Quarter

			C	L	CH
DP	118	Compiler Language II	2	4	4
DP	211	Data Processing Application I	2	4	4
DP	213	Computer Systems I	2	2	3
US	224	Cost Accounting	3	2	4
US	115	Business Law I	3	0	3
			12	12	18

Quarter

			C	L	CH
DP	212	Data Processing Application II	2	4	4
DP	214	Computer Systems II	2	2	3
JS	272	Supervision	3	0	3
		Elective—DP	3	0	3
		Elective	3	0	3
			13	6	16

anipulative laboratory" involves development of skills and job proficiency. Credit of quarter hour for each three hours of laboratory.

Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

Sixth Quarter			C	L
T-EDP	218	Data Processing Project	1	8
T-BUS	235	Business Management	3	0
T-ENG	204	Oral Communication	3	0
		Elective—Social Science	3	0
		Elective	3	0
			13	8

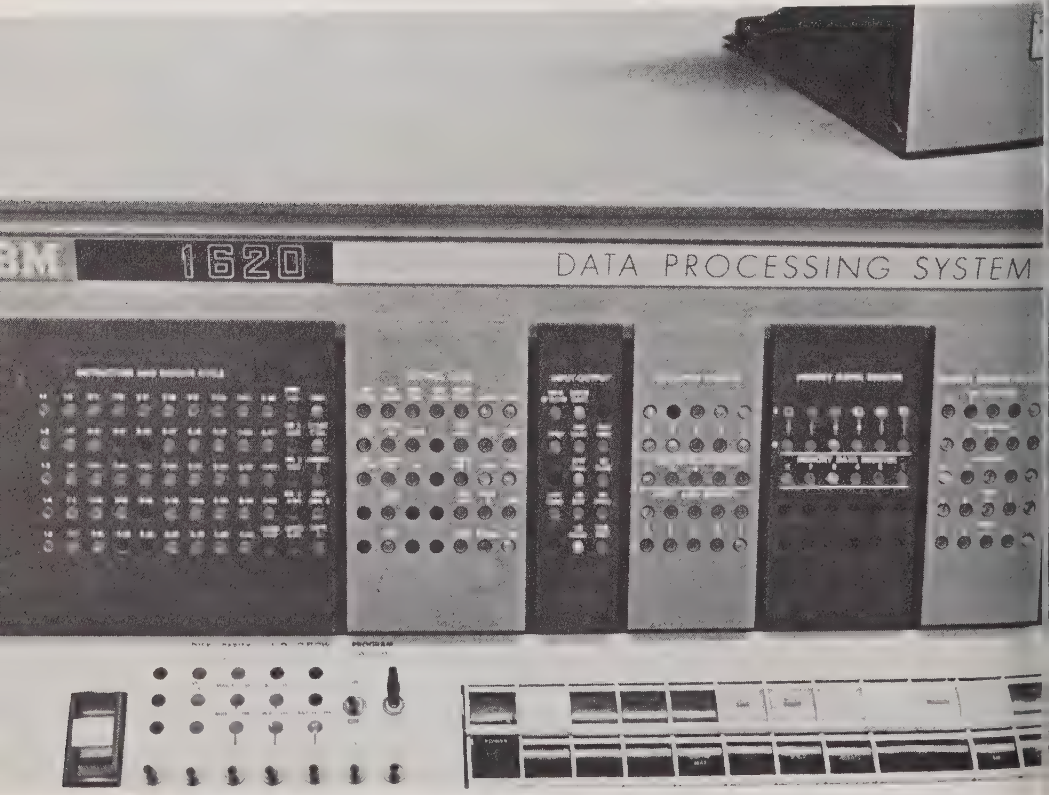
Total 1

ELECTIVES

Electives for the **Business Data Processing Curriculum** may be selected accordi the needs of the student. The school may determine which of these are to be of in any given quarter of the program.

SOCIAL SCIENCE

T-SSC	201	Social Science	3	0
T-SSC	202	Social Science	3	0
T-PSY	206	Applied Psychology	3	0
T-ECO	102	Economics	3	0
T-SSC	205	American Institutions	3	0
T-POL	201	United States Government	3	0



general office technology

rpose of Curriculum

More people are now employed in clerical occupations than in any other gle job category. Automation and increased production will mean that se people will need more technical skills and a greater adaptability for versified types of jobs.

The curriculum is designed to develop the necessary variety of skills for ployment in the business world. Specialized training in skill areas is plemented by related courses in mathematics, accounting, business law, d applied psychology.

Description

The graduate of the General Office Technology curriculum may be em- yed as an administrative assistant, accounting clerk, assistant office nager, bookkeeper, file clerk, machine transcriptionist, or a variety of her clerical-related jobs. Positions are available in almost every type of siness, large or small.

SUGGESTED CURRICULUM BY QUARTERS

st Quarter			C	L	CH
NG	101	Composition I	3	0	3
US	102	Typewriting I	2	3	3
AT	110	Business Mathematics	5	0	5
US	101	Introduction to Business	5	0	5
CO	102	Economics	3	0	3
			18	3	19

GENERAL OFFICE TECHNOLOGY

Second Quarter

			C	L
T-ENG	102	Composition II	3	0
T-BUS	103	Typewriting II	2	3
T-BUS	212	Machine Transcription	2	2
T-BUS	130	Secretarial Accounting	5	2
T-BUS	115	Business Law	3	0
			15	7

Third Quarter

			C	L
T-ENG	204	Oral Communication	3	0
T-BUS	104	Typewriting III	2	3
T-BUS	116	Business Law	3	0
T-BUS	111	Secretarial Office Machines	2	2
T-BUS	213	Machine Transcription	2	2
T-BUS	183	Terminology & Vocabulary	3	0
			15	7

Fourth Quarter

			C	L
T-ENG	103	Report Writing	3	0
T-EDP	103S	Concepts of Data Processing	4	0
T-BUS	205	Advanced Typewriting	2	3
T-BUS	211	Office Machines	2	2
T-BUS	232	Sales Development	3	0
		Business Elective	3	0
			17	5

Fifth Quarter

			C	L
T-ENG	206	Business Communication	3	0
T-BUS	112	Filing	3	0
T-BUS	271	Office Management	3	0
		Social Science Elective	3	0
		Business Elective	6	0
			18	0

Sixth Quarter

			C	L
		Social Science Elective	3	0
T-BUS	272	Supervision	3	0
T-BUS	214	Secretarial Procedures	3	2
T-BUS	105S	Typewriting Office Practice	2	3
		Business Elective	3	0
			14	5

Total

ELECTIVES

Electives for the **General Technology Curriculum** may be selected from the following urses. The school will determine which of these are to be offered in any given quarter the program.

TECHNICAL

BUS	247	Business Insurance	3	0	3
BUS	245	Retailing	3	0	3
BUS	217	Business Law	3	0	3
BUS	215	Office Application	6	0	6
PSY	112	Personality Development	3	0	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3

medical secretary

Purpose of Curriculum

The demand for better qualified medical secretaries in our ever-expand medical profession is becoming more acute. The purpose of this curricul is to outline a training program that will provide specialized training in accepted procedures required by the medical profession, and to ena persons to become proficient soon after accepting employment in medical and health occupations.

The Medical Secretary Curriculum is designed to offer the students necessary secretarial skills in typing, dictation, transcription, and termi ogy for employment in the medical profession. The special training secretarial subjects is supplemented by related courses in mathemat accounting, business law, and personality development.

Job Description

The graduate of the Medical Secretary Curriculum should have a kno edge of medical terminology, skill in dictation and accurate transcriptio medical records, reports and letters. The duties of a medical secretary consist of: taking dictation and transcribing letters, memoranda and repo meeting office callers and screening telephone calls, filing, and schedu appointments. The graduate may enter a secretarial position in a variet offices such as physicians', private and public hospitals, federal and s health programs, and the drug and pharmaceutical industry.

SUGGESTED CURRICULUM BY QUARTERS

st Quarter			C	L	CH
NG	101	Composition I	3	0	3
US	102	Typewriting I	2	3°	3
AT	110	Business Mathematics	5	0	5
US	101	Introduction to Business	5	0	5
US	106	Shorthand I	3	2	4
			18	5	20

ond Quarter			C	L	CH
NG	102	Composition II	3	0	3
US	103	Typewriting II	2	3°	3
US	107	Shorthand II	3	2	4
US	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

ird Quarter			C	L	CH
NG	204	Oral Communication	3	0	3
US	104	Typewriting III	2	3°	3
US	108	Shorthand III	3	2	4
US	111	Secretarial Office Machines	2	2	3
US	112	Filing	3	0	3
US	182MS	Anatomy	3	0	3
			16	7	19

rth Quarter			C	L	CH
NG	103	Report Writing	3	0	3
US	206M	Dictation and Transcription	3	2	4
US	205	Advanced Typewriting	2	3°	3
US	211	Office Machines	2	2	3
DP	103S	Concepts of Data Processing	4	0	4
US	183M	Terminology and Vocabulary	3	0	3
			17	7	20

Manipulative laboratory" involves development of skills and job proficiency. Credit one quarter hour for each three hours of laboratory.

=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

MEDICAL SECRETARY

Fifth Quarter

			C	L
T-ENG	206	Business Communication	3	0
T-BUS	207M	Dictation and Transcription	3	2
T-BUS	115	Business Law	3	0
		Social Science Elective	3	0
T-BUS	284M	Terminology and Vocabulary	3	0
			15	2

Sixth Quarter

			C	L
T-BUS	208M	Dictation and Transcription	3	2
T-BUS	271	Office Management	3	0
T-BUS	214	Secretarial Procedures	3	2
Elective			3	0
			12	4

Total 1

ELECTIVES

Electives for the **Medical Secretarial Curriculum** may be selected from the follow courses. The school will determine which of these are to be offered in any gi quarter of the program.

			C	L
T-BUS	215M	Office Application	6	0
T-ECO	108	Consumer Economics	3	0
T-ECO	102	Economics	3	0
T-PSY	112	Personality Development	3	0
T-BUS	116	Business Law	3	0
T-BUS	105S	Typing Office Production	2	3

SOCIAL SCIENCE

T-SSC	201	Social Science	3	0
T-SSC	202	Social Science	3	0
T-PSY	206	Applied Psychology	3	0
T-SSC	205	American Institutions	3	0
T-POL	201	United States Government	3	0

scientific data processing

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pose of Curriculum

he processing of data by electronic equipment has created vast changes scientific research and industry. The curriculum of Scientific Data cessing is designed, especially in the second year, to assist students in paring for the new techniques and stresses mathematics in each of the quarters of work. The program provides graduates qualified to:

1. Apply currently available programming techniques to a defined problem with minimum supervision.
2. Program and operate any computer with a minimum of orientation.
3. Understand and master special techniques as the need occurs.
4. Communicate their properly documented programming decisions to personnel concerned.

mphasis in the second year of the curriculum is upon scientific data cessing. Machines are used in the solution of research, production and ineering problems.

udents learn calculus, numerical analysis, theory of probability and istics.

Description

he scientific data processing specialist analyzes and defines requirements develop program for electronic data processing; conducts detailed lyses of systems requirements, and develops all levels of block diagrams logical flow charts; translates program details into coded instructions; elops and prepares plans; establishes test data; tests, refines, and revises gram. Evaluates and modifies existing programs and procedures or con- of reports change.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L
T-EDP	103	Introduction to Computer Concepts	4	0
T-EDP	110	Functional Wiring	3	2
T-MAT	101	Technical Mathematics	5	0
T-ENG	101	Compostion I	3	0
			15	2

Second Quarter

			C	L
T-EDP	114	Compiler Language I	2	4
T-MAT	102	Technical Mathematics II	5	0
T-ENG	102	Composition II	3	0
T-BUS	120	Accounting I	5	2
			15	6

Third Quarter

			C	L
T-EDP	116	Assembly Language	2	4
T-MAT	103	Technical Mathematics III	5	0
T-MAT	214	Statistics	5	0
T-ENG	103	Technical Report Writing	3	0
			15	4

Fourth Quarter

			C	L
T-EDP	118	Compiler Language II	2	4
T-EDP	215	Statistical Programming	2	4
T-EDP	213	Computer Systems I	2	2
T-MAT	201	Technical Mathematics IV	5	0
		Elective	3	0
			14	10

Fifth Quarter

			C	L
T-EDP	217	Numerical Analysis Programming	2	
T-EDP	214	Computer Systems II	2	
T-PHY	101	Physics I	3	
		Elective—Social Science	3	
		Elective—DP	3	
			13	

Sixth Quarter

			C	L
T-EDP	218	Data Processing Project	1	
T-PHY	102	Physics II	3	
T-ENG	204	Oral Communication	3	
		Elective	4	
			11	1

Total

ELECTIVES

lectives for the **Scientific Data Processing Curriculum** may be selected according he needs of the student. The school will determine which of these are to be offered ny given quarter of the program.

SOCIAL SCIENCE

SC	201	Social Science	3	0	3
SC	202	Social Science	3	0	3
SY	206	Applied Psychology	3	0	3
CO	102	Economics	3	0	3
SC	205	American Institutions	3	0	3
OL	201	United States Government	3	0	3

Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

technical secretary

Purpose of Curriculum

The Technical Secretary Curriculum is designed to prepare a stu for a position in the office of a firm dealing in research development production in the scientific fields. The curriculum offers students necessary secretarial skills and the required background of undertan and appreciation of the scientific method, and beginnings of a techn vocabulary and a feeling of respect for accuracy that will be essenti later work in the field.

Job Description

Graduates of this program may qualify for employment as stenograp secretaries, technical secretaries, and possibly as private secretaries. are in demand where engineers and other technical personnel find a for secretarial help who can understand the specialized languag Electrical, Mechanical, Civil, or Chemical Engineers. The duties o engineering and technical secretary may consist of taking dictation transcribing letters, memoranda and reports, meeting office callers screening telephone calls, filing, and scheduling appointments. Grad of this program, since they have received a background of science engineering terminology in addition to their business background, admirably prepared to work with engineering reports, records and c spondence.

SUGGESTED CURRICULUM BY QUARTERS

t Quarter

			C	L	CH
NG	101	Composition I	3	0	3
US	102	Typewriting I	2	3°	3
AT	110	Business Mathematics	5	0	5
US	101	Introduction to Business	5	0	5
US	106	Shorthand I	3	2	4
			18	5	20

nd Quarter

			C	L	CH
NG	102	Composition II	3	0	3
US	103	Typewriting II	2	3	3
US	107	Shorthand II	3	2	4
US	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

d Quarter

			C	L	CH
NG	204	Oral Communication	3	0	3
JS	194	Typewriting III	2	3°	3
JS	108	Shorthand III	3	2	4
JS	111	Secretarial Office Machines	2	2	3
JS	112	Filing	3	0	3
JS	183T	Terminology and Vocabulary	3	0	3
			16	7	19

th Quarter

			C	L	CH
NG	103	Report Writing	3	0	3
JS	206T	Dictation and Transcription	3	2	4
JS	205	Advanced Typewriting	2	3°	3
JS	211	Office Machines	2	2	3
DP	103	Concepts of Data Processing	4	0	4
		Elective	3	0	3
			17	7	20

Quarter

			C	L	CH
NG	206	Business Communication	3	0	3
JS	207T	Dictation and Trasncription	3	2	4

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nipulative laboratory" involves development of skills and job proficiency. Credit e quarter hour for each three hours of laboratory.

Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

TECHNICAL SECRETARY

T-BUS	115	Business Law	3	0
		Social Science Elective	3	0
		Elective	3	
			15	2

Sixth Quarter

			C	L
T-BUS	208T	Dictation and Transcription	3	2
T-BUS	271	Office Management	3	0
T-BUS	214	Secretarial Procedures	3	2
		Elective	3	0
			12	4

Total

ELECTIVES

Electives for the **Technical Secretarial Curriculum** may be selected from the fol courses. The school will determine which of these are to be offered in any quarter of the program.

TECHNICAL SECRETARY

			C	L
T-PSY	112	Personality Development	3	
T-ECO	102	Economics	3	
T-BUS	215T	Office Application	6	
T-ECO	108	Consumer Economics	3	
T-BUS	116	Business Law	3	
T-BUS	105S	Typing Office Production	2	

SOCIAL SCIENCE

T-SSC	201	Social Science	3	
T-SSC	202	Social Science	3	
T-PSY	206	Applied Psychology	3	
T-SSC	205	American Institutions	3	
T-POL	201	United States Government	3	

°“Manipulative laboratory” involves development of skills and job proficiency of one quarter hour for each three hours of laboratory.

C = Class Hrs. Per Week L = Lab Hrs. Per Week CH = Credit Hrs.

Engineering Technology

air conditioning & refrigeration technology

ose of Curriculum

recent years the use of air-conditioning and refrigeration equipment ncreased tremendously. Practically all new building construction for ess and commercial use have "year-round" air-conditioning systems. homes now have air conditioning and the trend is toward greater use ear-round" systems for cooling and heating. Transportation systems food industries are requiring greater use of refrigeration systems for it storage and display of products. With this great upswing in the use -conditioning and refrigeration equipment, a greater demand is made ined personnel to plan and supervise installations and to supervise the ition and maintenance of this equipment.

e curriculum is designed to prepare the student to assist in planning, ling, operating and maintaining air conditioning equipment. The red technical information is presented and related skills are developed will enable the graduate to function efficiently when working with eers, systems designers, skilled craftsmen, salesmen, and others in the Considerable emphasis is placed on self-development in an effort to rage the graduate to continue to study and grow as the industry nces.

escription

air conditioning and refrigeration technician may be employed in of sales, installation, maintenance, production drafting, systems design, a research engineering assistant. He is involved with equipment for ating temperature and humidity. He works with control systems, ducts iping for distribution of air, water, steam, and refrigerants. His duties be concerned with any or all of these systems and components.

AIR CONDITIONING AND
REFRIGERATION TECHNOLOGY

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C
T-ENG	101	Composition I	3
T-MAT	101	Technical Mathematics	5
T-PHY	101	Physics: Properties of Matter	3
T-DFT	101	Technical Drafting	2
T-AHR	101	Fundamentals of Refrigeration I	4
			17

Second Quarter

			C
T-ENG	102	Composition II	3
T-MAT	102	Technical Mathematics	5
T-PHY	102	Physics: Work, Energy, Power	3
T-DFT	102	Technical Drafting	2
T-AHR	102	Fundamentals of Refrigeration II	3
			16

Third Quarter

			C
T-ENG	103	Report Writing	3
T-MAT	103	Technical Mathematics	5
T-PHY	103	Physics: Electricity	3
T-AHR	103	Commercial Refrigeration Systems Designs	3
			14

Fourth Quarter

			C
T-ENG	204	Oral Communication	3
T-DFT	204	Description Geometry	2
T-PHY	231	Fluid Mechanics	3
T-AHR	201	Heating Principles	3
T-AHR	216	Circuits & Controls I	3
			14

Fifth Quarter

			C
		Social Science Elective	3
T-AHR	203	Air Conditioning Principles	5
T-DFT	226	Air Conditioning Systems Drawing	0
		Elective	4
			12

°"Manipulative laboratory" involves development of skills and job proficienc
of one quarter hour for each three hours of laboratory.
C=Class Hrs Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

Quarter			C	L	CH
		Social Science Elective	3	0	3
R	209	Air Conditioning Systems Design	5	6°	7
R	227	Estimating & Contracts	3	6°	5
		Elective	3	0	3
			14	12	18

Total 110

ION FOR STUDENTS COMPLETING DIPLOMA PROGRAM

iates of a diploma curriculum in air conditioning and refrigeration with the recom-
ation of the department head and the faculty advisor will be permitted to under-
n additional four quarters of technical instruction leading to an associate degree
Conditioning and Refrigeration.

Quarter			C	L	CH
G	102	Composition II	3	0	3
T	101	Technical Drafting	2	4	3
R	209	Air-Conditioning System Design	5	6	7
T	101	Technical Mathematics	5	0	5
			15	10	18

Quarter			C	L	CH
	101	Physics: Properties of Matter	3	2	4
T	102	Technical Mathematics	5	0	5
T	102	Technical Drafting	2	4	3
R	203	Air-Conditioning Principles	5	6	7
			15	12	19

th Quarter			C	L	CH
	102	Physics: Work, Energy, Power	3	2	4
	103	Report Writing	3	0	3
T	204	Descriptive Geometry	2	4	4
R	228	Indoor Environmental Control	3	6	5
			11	12	16

Quarter			C	L	CH
G	204	Oral Communication	3	0	3
	231	Fluid Mechanics	3	0	3
		Social Science Elective	3	0	3
			9	0	9

ipulative laboratory" involves development of skills and job proficiency. Credit
quarter hour for each three hours of laboratory.
ass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

		Social Science Elective	3
AHR	230	Seminar & Research	3

ELECTIVES

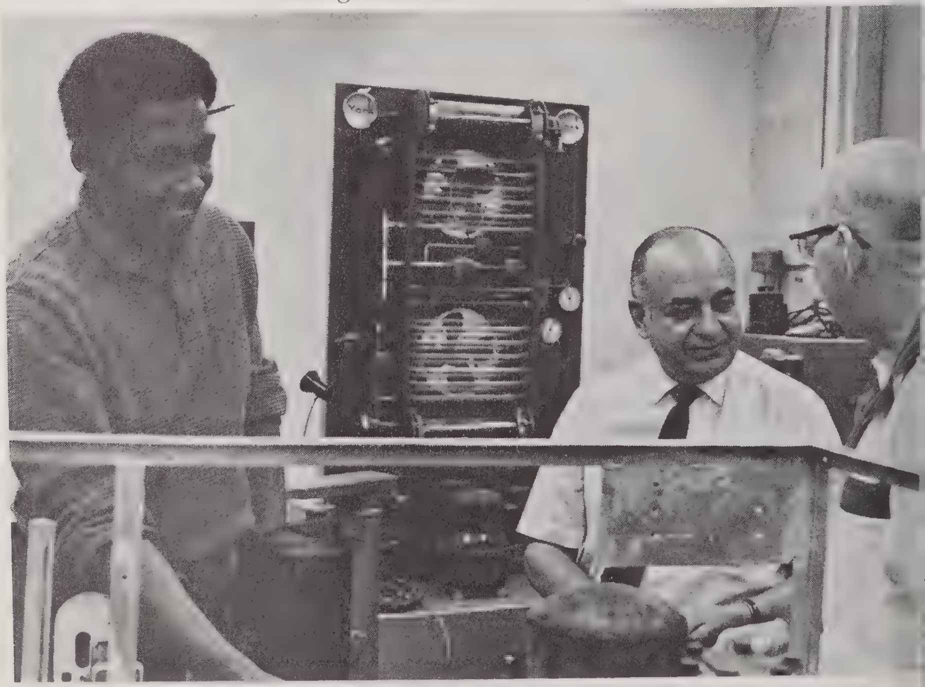
Electives for the **Air Conditioning and Refrigeration Technology Curriculum** selected from the following courses. The school will determine which of these a offered in any given quarter of the program.

TECHNICAL

			C
T-AHR	217	Circuits and Controls II	3
T-AHR	230	Seminar and Research	1
T-AHR	210	Installation and Design Problems	2
T-AHR	202	Fuels and Burners	2

SOCIAL SCIENCE

T-SSC	201	Social Science I	3
T-SSC	202	Social Science II	3
T-PSY	206	Applied Psychology	3
T-ECO	102	Economics	3
T-SSC	205	American Institutions	3
T-POL	201	United States Government	3
T-ISC	201	Industrial Organization and Management	3



chemical technology

ose of Curriculum

is curriculum guide provides a program for instruction of students in
asic knowledge and skills involved in laboratory and plant operations
e chemical industry. Technical knowledge and laboratory techniques
mphasized and a relationship between the theoretical and practical
tained.

e curriculum is designed to prepare persons to serve in two distinct
: (1) research assistant to a chemist in the laboratory; and (2) planning
production assistant to chemical engineers in converting the research
ist's discoveries into actual industrial production. Research laboratory
ants must be well grounded in chemical analysis, testing, and synthesis.
nical production assistants must have command of a basic knowledge of
ical processing and ability to use main types of equipment and
inery for making chemical products.

Description

he chemical technician performs quantitative and qualitative chemical
ses of processes involved in a production situation. Tests samples of
naterials to determine that they are within specification limits required
nanufacturing of desired products. Analyzes samples of product inter-
ates at manufacturing steps so as to supply data to processing personnel
hich they may control reactions involved, to determine whether
ssing is being performed according to plant specifications, and to
current production problems. Analyzes samples of finished products to
mine whether quality warrants its release for shipment, using analytical
ods to determine percentages, such as acetone extract, heating loss, or
ontent. Prepares laboratory test reports and checks analyses with
fications and consults with laboratory supervisors. Makes special
ses as necessary. May secure samples used.

CHEMICAL TECHNOLOGY

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		COURSE TITLE	C
T-ENG	101	Composition I	3
T-MAT	101	Technical Math	5
T-DFT	101	Technical Drafting	2
T-CHM	111	General Chemistry I	4
		Social Science Elective	3
			17

Second Quarter

			C
T-ENG	102	Composition II	3
T-MAT	102	Technical Math	5
T-PHY	101	Properties of Matter	3
T-DFT	102	Technical Drafting	2
T-CHM	112	General Chemistry II	4
			17

Third Quarter

			C
T-ENG	103	Report Writing	3
T-MAT	103	Technical Math	5
T-PHY	102	Work Energy and Power	3
T-CHM	113S	General Chemistry III	4
T-CHM	205S	Qualitative Analysis	2
			17

Fourth Quarter

			C
T-ENG	204	Oral Communication	3
T-CHM	121	Quantitative Analysis I	3
T-CHM	227	Physical Chemistry	3
T-PHY	103	Electricity	3
		Social Science Elective	3
			15

Fifth Quarter

			C
T-CHM	222	Quantitative Analysis II	2
T-CHM	231	Organic Chemistry I	3

°"Manipulative laboratory" involves development of skills and job proficien
of one quarter hour for each three hours of laboratory.
C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

IY	104	Light and Sound	3	2	4
		Electives	5	0	5
			13	17	19

Quarter			C	L	CH
IM	232	Organic Chemistry II	3	6	5
IM	241	Industrial Chem. Analysis I	3	9°	6
		Electives	3	0	3
			9	15	14

nth Quarter			C	L	CH
IM	233	Organic Chemistry III	3	6	5
IM	242	Industrial Chem. Analysis II	3	12	7
		Electives	3	0	3
			9	18	15

Total 127

ELECTIVES

lectives for the **Chemical Technology Curriculum** may be selected from the following es. The school may determine which of these are to be offered in any given ter of the program.

TECHNICAL

EC	116	Engineering Materials	3	0	3
AT	201	Technical Mathematics	5	0	5
AT	219	Differential Equations	5	0	5
IY	231	Fluid Mechanics	3	0	3

SOCIAL SCIENCE

	201	Social Science	3	0	3
	202	Social Science	3	0	3
	206	Applied Psychology	3	0	3
EO	102	Economics	3	0	3
	205	American Institutions	3	0	3
L	201	United States Government	3	0	3
	201	Industrial Organization and Management	3	0	3

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nipulative laboratory" involves development of skills and job proficiency. Credit quarter hour for each three hours of laoratory.

lass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.

drafting & design technology

Purpose of Curriculum

This curriculum guide was prepared for the purpose of outlining a ing program for students of mechanical drafting and design techr There are certain identifiable duties which are common to all techı of this general classification and which comprise the basic areas of tec knowledge they need. This curriculum has been designed for tı persons in the accepted performance of these basic duties that v assigned, and to enable the individual student to become proficie short time after he becomes employed in the industry.

Courses in general education have been included to give a stud assurance and understanding that comes with education upon a broa The technician associates with many levels of thought and expre administrative personnel, scientists, engineers, skilled workmen—an be able to communicate effectively with all levels. Courses con essential information from related subject areas, such as mathe physics, and mechanics have been included in order to provide the s a better academic base for his training. Emphasis is placed upon ab think and plan, as well as drafting procedures and techniques.

Job Description

Mechanical drafting and design technicians are concerned w preparation of drawings for design proposals, for experimental mod items for production use.

These technicians perform many aspects of drafting in a specialize such as the developing of the drawing of a section, sub-assembly o component. Investigating design factors and availability of mater equipment, production methods and facilities are frequent assig They assist in the design of units and controls from specificati utilizing drawings of existing units and reports on functional perfo They may draw components in industrial fields based on engineers' design concepts or specific ideas. Also, they may be assigned as coor the execution of related work of other design, production, tooling, erial and planning groups. Technicians with experience in this classifica- may often supervise the preparation of working drawings.

hese technicians are employed in many types of manufacturing, fabrica- , research development and service industries. Substantial numbers are employed in communications, transportation, public utilities, con- ing engineering firms, and federal, state, and local governments.

SUGGESTED CURRICULUM BY QUARTERS

Quarter

			C	L	CH
HM	111	General Chemistry	4	3	5
NG	101	Composition I	3	0	3
FT	101	Technical Drafting	2	4	3
AT	101	Technical Mathematics	5	0	5
EC	101	Machine Processes	0	6	2
			14	13	18

nd Quarter

			C	L	CH
NG	102	Composition II	3	0	3
C	101	Fundamentals of Electricity	4	4	6
AT	102	Technical Mathematics	5	0	5
IY	101	Properties of Matter	3	2	4
			15	6	18

d Quarter

			C	L	CH
EC	102	Machine Processes	0	6*	2
NG	204	Oral Communication	3	0	3
FT	102	Technical Drafting	2	4	3
AT	103	Technical Mathematics	5	0	5
HY	102	Work, Energy & Power	3	2	4
			13	12	17

th Quarter

			C	L	CH
HY	103	Physics: Electricity	3	2	4
NG	103	Report Writing	3	0	3
FT	103	Technical Drafting	1	6	3
HY	106	Applied Mechanics	5	0	5
EC	210	Physical Metallurgy	3	3	4
			15	11	19

anipulative laboratory" involves development of skills and job proficiency. Credit e quarter hour for each three hours of laboratory.

Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr

DRAFTING AND DESIGN TECHNOLOGY

Fifth Quarter

			C	L
T-DFT	201	Technical Drafting	2	6
T-DFT	204	Descriptive Geometry	2	4
T-MEC	205	Strength of Materials	3	2
T-MEC	211	Physical Metallurgy	3	3
			10	15

Sixth Quarter

			C	L
T-DFT	205	Design Drafting I	2	6
T-DFT	211	Mechanisms	3	
		Social Science Elective	3	
T-EDP	104	Introduction to Data Processing	3	
			11	

Seventh Quarter

			C	L
T-DFT	206	Design Drafting II	2	
T-MEC	235	Hydraulics & Pneumatics	3	
		Technical Elective	0	
		Technical Elective	0	
		Social Science Elective	3	
			8	

Total

ELECTIVES

Electives for the **Drafting & Design Technology Curriculum** may be selecte the following courses. The school will determine which of these are to be off any given quarter of the program.

TECHNICAL

			C
T-ELC	102	Fundamentals of Electricity	4
T-DFT	212	Jig and Fixture Design	2
T-ELN	201	Industrial Controls	3
T-ELC	201	Electricity Machinery	3
T-MEC	237	Control Systems	2
T-ISC	201	Industrial Organization and Management	3

SOCIAL SCIENCE

T-SSC	201	Social Science I	3
T-SSC	202	Social Science II	3
T-PSY	206	Applied Psychology	3
T-ECO	102	Economics	3
T-SSC	205	American Institutions	3
T-POL	201	United States Government	3

°"Manipulative laboratory" involves development of skills and job proficiency. of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

electronics technology

pose of Curriculum

he field of electronics has developed at a rapid pace since the turn of century. For many years the major concern of electronics was in the of communications. Developments during World War II and in the od since have revolutionized production techniques. New industries been established to supplement the need and demand for electronics pment.

any opportunities exist for men and women with a technical education lectronics. This curriculum provides a basic background in electronic ed theory with practical applications of electronics for business and stry. Courses are designed to develop competent electronics technicians may take their place as an assistant to an engineer, or as a liaison een the engineer and the skilled craftsman.

Description

e electronics technician may start in one or more of the following s: research, design, development, production, maintenance or sales. may be an assistant to an engineer, an engineering aide, laboratory nician, supervisor or equipment specialist. His training is similar to that engineer, but in less depth and more practical in application. He can tion as a liaison between an engineer and the skilled craftsman.

ELECTRONICS TECHNOLOGY

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L
T-ENG	101	Composition I	3	
T-ELC	101	Fundamentals of Electricity	4	
T-EDP	104	Introduction to Electronic Data Processing Systems	3	
T-MAT	101	Technical Mathematics	5	
T-MEC	101	Machine Processes	0	
			15	

Second Quarter

			C	
T-ENG	102	Composition II	3	
T-CHM	111	General Chemistry	4	
T-DFT	101	Technical Drafting	2	
T-MAT	102	Technical Mathematics	5	
T-PHY	101	Properties of Matter	3	
			17	

Third Quarter

			C	
T-ENG	204	Oral Communication	3	
T-ELC	102	Fundamentals of Electricity	4	
T-DFT	102	Technical Drafting	2	
T-MAT	103	Technical Mathematics	5	
T-PHY	102	Work, Energy & Power	3	
			17	

Fourth Quarter

			C	
T-ENG	103	Report Writing	3	
T-ELN	101	Electronic Instruments and Measurements	1	
T-ELN	105	Control Devices	5	
T-MAT	201	Technical Mathematics	5	
			14	

Fifth Quarter

			C	
T-ELN	205	Applications of Vacuum Tubes and Transistors	5	
T-ELN	208	Solid State & Thin Film Devices	5	
T-ELN	214	Wave Shaping & Pulse Circuits	2	
T-PHY	104	Light & Sound	3	
			15	

°"Manipulative laboratory" involves development of skills and job proficiency
of one quarter hour for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

th Quarter

			C	L	CH
ELN	215	Wave Shaping & Pulse Circuits	2	3*	3
ELN	220	Electronic Systems	5	6*	7
ELN	210	Semiconductor Circuit Analysis	5	3*	6
		Social Science Elective	3	0	3
			15	12	19

enth Quarter

			C	L	CH
LN	227	UHF & Microwave Systems	5	4	7
LN	235	Industrial Instrumentation	4	6	7
LN	240	Digital Computers	3	0	3
		Social Science Elective	3	0	3
			15	10	20

Total 138

ELECTIVES

lectives for the **Electronics Technology Curriculum** may be selected from the
wing courses. The school will determine which of these are to be offered in any
n quarter of the program.

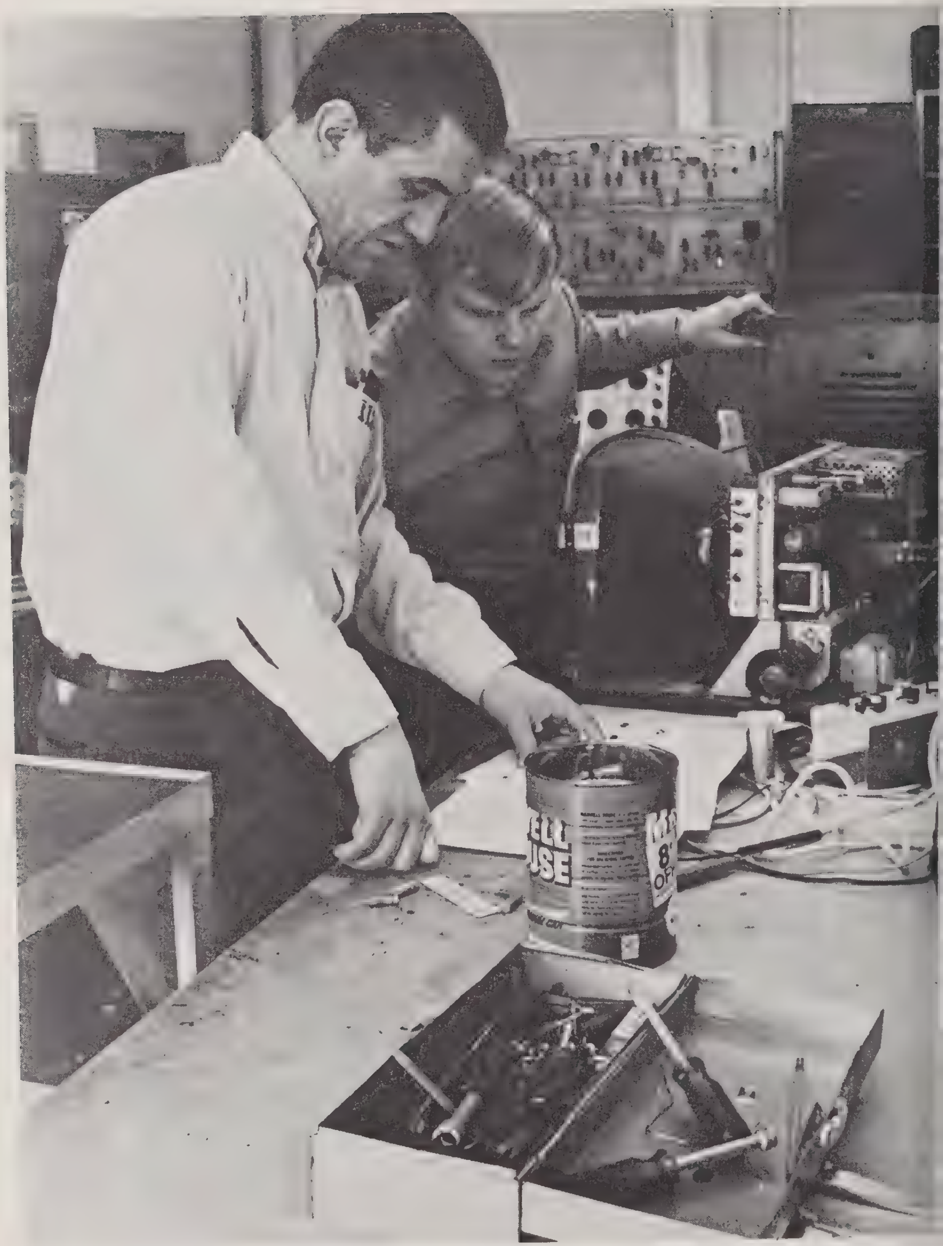
TECHNICAL

			C	L	Cr
LN	225	Transmission and Propagation	3	0	3
LN	230	Television Systems	4	6	7
LN	245	Electronic Design Project	0	4	2
LC	210	Rotating Devices	2	2	3
AT	208	Calculus and Laplace Transforms for Electronics	5	0	5
EC	110	Fundamental Mechanisms	2	4	4

SOCIAL SCIENCE

C	201	Social Science	3	0	3
C	202	Social Science	3	0	3
Y	206	Applied Psychology	3	0	3
O	102	Economics	3	0	3
C	205	American Institutions	3	0	3
L	201	United States Government	3	0	3

anipulative laboratory” involves development of skills and job proficiency. Credit
ie quarter hour for each three hours of laboratory.
lass Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs. Per Qtr.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diploma programs

DIPLOMA PROGRAMS

(ONE-YEAR)

ADMISSION REQUIREMENTS

The following are minimum admission requirements to the regular on preparatory curriculums and vocational programs:

Minimum Admission Requirements

A candidate for admission to the regular trade-vocational training pro must meet the following qualifications:

1. Must be at least 18 years of age and have the ability to enter i make advancement in the area in which enrolled.
2. Must have satisfactorily completed a minimum of eight (8) u accredited secondary school work. Those who have not succe completed eight (8) units of such work will be required to take standard and/or local institution tests.
3. Must demonstrate aptitude for vocational training as deter by standard and/or local institution tests to insure ability to job requirements in the desired trade.
4. May be required to have a personal interview with designated representative.
5. Must be in acceptable physical and mental health to meet c cations for a given occupation.

In addition to the above minimum admission requirements, more s prerequisites are necessary in some programs.

It is suggested that students should have completed one unit of alge

Facilities are available at the Institute for removal of academic defici

Health Occupations

dental assisting

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pose of Curriculum

Dental assisting is one of the fastest growing occupations for women today. role of the dental assistant has evolved from that of receptionist only to of a fully participating member of the dental team; primary emphasis n chairside assisting, although she continues to perform numerous duties ted to office management, patient relations, and laboratory procedures. dental profession now recognizes the contribution the dental assistant make to the extension of services and increased productivity of the tal office. Projected needs call for a fivefold expansion in numbers of luates and continued improvement in the quality of training programs.

he specific objectives of the Dental Assisting Curriculum are to develop following competencies:

1. Understanding of the business procedures of the dental office.
2. Understanding of principles and beginning skill in the procedures of chairside assisting, including effective patient relationships.
3. Understanding of principles and beginning skills in performance of selected laboratory procedures commonly carried out in the dental office.

Description

he duties of the dental assistant vary somewhat, depending on the nber of auxiliary workers employed. In some offices the assistant is onsible for all three areas described below; in others, she may be ponsible for only one area.

rendering chairside assistance to the dentist, the dental assistant sponsible for placing instruments for use, keeping the operating field r during treatment, preparing restorative materials and dental cements, ing materials and instruments during dental procedures, and care of the ratory after use. She may take X-rays of the teeth and apply fluorides er the direction of the dentist. In the laboratory of the dental office, she make models of the teeth and mouth, cast inlays and crowns, process

exposed X-ray films and mount finished X-rays. In acting as office mar
and receptionist, she receives patients, arranges appointments, re
treatment, keeps accounts, maintains inventories, and orders supplie

SUGGESTED CURRICULUM BY QUARTERS

First Quarter	C	L
DEN 1001 Introduction to Dental Assisting	2	
DEN 1002 Dental Materials	2	
DEN 1003 Preclinical Sciences I	3	
ENG 1102 Communication Skills	3	
PSY 1112 Personality Development	3	
	13	1

Second Quarter	C	L
DEN 1004 Preclinical Sciences II	4	
DEN 1005 Dental Accounting	3	
DEN 1006 Clinical Procedures I	5	
BUS 1102 Typewriting	2	
	14	1

Third Quarter	C	L
DEN 1007 Clinical Procedures II	5	
DEN 1008 Dental Office Management	4	
DEN 1009 Dental Office Practice I	0	1
ENG 1103 Report Writing	3	
	12	2

Fourth Quarter	C	L
DEN 1010 Dental Office Practice II	0	3
DEN 1011 Dental Assistant Seminar	1	
	1	3

Total

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of one quarter hour for each three hours of laboratory.
C=Class Hrs. Per Week   L=Lab Hrs. Per Week   CH=Credit Hrs.

practical nursing

he accelerated growth in North Carolina and rapid advancement in dical technology demands a large increase in the number of well-trained, able personnel for health service positions.

he aim of this program is to make available the opportunity for the rested male and female to prepare themselves for participation in the e of patients of all ages, in various states of dependency, and with a iety of illness conditions.

tudents are selected on the basis of interest in and aptitude for nursing, letermined by pre-entrance test, high school records, personal interviews, lth reports, and character references.

scription of Program

he Practical Nurse Education program is taught in a 4-quarter period of ssroom instruction and supervised nursing practice.

ollowing a period of classroom instruction in fundamentals of nursing, l principles from the sciences, the student practices nursing skills under lty supervision in the hospital areas. The student advances in her dies, and in the nursing care of patients of all ages through planned gnments in medical-surgical nursing, care of the mother and newborn nt, and the care of the sick child.

ther learning opportunities are planned in offices of local physicians l a public health clinic.

he graduate practical nurse is eligible to take, and must pass, the North olina Board of Nursing Licensing exam for practical nurses in order to ctice in North Carolina.

he LPN is qualified and prepared to function in a variety of situations: pitals, nursing homes, clinics, doctors' offices, private duty nursing, l in public health programs. In all situations the LPN functions under the ervision of a registered nurse and/or a licensed physician.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		C	L	CL
PNE 1001	Fundamentals of Health	2	0	0
PNE 1002	Basic Science	6	4	0
PNE 1003	Fundamentals of Practical Nursing	4	8	0
PSY 1101	Human Relations	3	0	0
		15	12	0

Second Quarter		C	L	CL
PNE 1013	Mental Health	3	0	0
°PNE 1006	Maternity Nursing	2	2	0
PNE 1005	Fundamentals of Medical-Surgical Nursing I	2	2	0
PNE 1004	Clinical Nursing Experience I	0	0	21
		7	4	21

Third Quarter		C	L	CL
°PNE 1007	Nursing of Children	2	2	0
PNE 1009	Medical-Surgical Nursing II	4	2	0
PNE 1008	Clinical Nursing Experience II	0	0	2
		6	4	2

Fourth Quarter		C	L	CL
PNE 1012	Advanced Medical-Surgical Nursing III	4	0	
PNE 1014	Vocational Adjustments	2	2	
PNE 1011	Clinical Nursing Experience III	0	0	2
		6	2	2

°A portion of the class may be scheduled to take these courses during another

C=Class Hrs. Per Week L=Lab Hrs. Per Week CL=Clinical Lab Hrs. Pe

CH=Credit Hrs. Per Qtr.

Mechanical Occupations

air conditioning & refrigeration mechanics

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rpose of Curriculum

In recent years the use of air conditioning and refrigeration equipment s increased tremendously. Practically all new building construction for siness and commerical use have "all year" comfort systems. Many homes w have air conditioning and the trend is toward greater use of "all year" stems of cooling and heating. The food industry is requiring greater use refrigeration systems in freezing, storage, and display of products. With s great upswing in the use of air conditioning and refrigeration equipment, greater demand is made on trained personnel to install, operate, maintain d service this equipment.

This curriculum is designed to give the students practical knowledge that ll enable them to become capable service men in the industry. The nciple objective has been to outline the required technical and related struction to enable them to understand the basic principles involved in construction, operation, and maintenance of equipment. Job opportuni- s exist with commercial companies that specialize in air conditioning, tomatic heating, sheet metal and commercial refrigeration installation d service. The service man is employable in areas of sales, maintenance, tallation and in the growing fields of truck and trailer refrigeration.

Description

The air conditioning and refrigeration mechanic installs, inspects, main- ns, services and repairs domestic and commercial equipment. Connects tors, compressors, temperature controls, humidity controls, and circu- ing fans to control panels: Tests systems, observes pressure and vacuum ges and adjusts controls to insure proper operation.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			C	L
AHR	1121	Principles of Refrigeration	5	
MAT	1101	Fundamentals of Mathematics	5	
ENG	1101	Reading Improvement	2	
PHY	1101	Applied Science	3	
DFT	1104	Blueprint Reading: Mechanical	0	
			15	

Second Quarter			C	L
AHR	1122	Domestic and Commercial Refrigeration	3	
MAT	1102	Algebra	5	
ENG	1102	Communication Skills	3	
ELC	1102	Applied Electricity	2	
DFT	116	Blueprint Reading: Air Conditioning	1	
			14	

Third Quarter			C	
AHR	1123	Principles of Air Conditioning	5	
AHR	1128	Automatic Controls	3	
PSY	1101	Human Relations	3	
WLD	1101	Basic Gas Welding	0	
			11	

Fourth Quarter			C	
AHR	1130	Duct Layout and Fabrication	2	
AHR	1124	Air Conditioning and Refrigeration Servicing	3	
AHR	1126	All Year Comfort System	3	
BUS	1103	Small Business Operations	3	
			11	

FOR THOSE WHO DESIRE ADDITIONAL TRAINING

Graduates of a diploma curriculum in air conditioning and refrige
with the recommendation of the department head and the faculty a
will be permitted to undertake an additional four quarters of techni
struction leading to an associate degree in Air Condition and Refrige

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*"Manipulative laboratory" involves development of skills and job proficiency
of one quarter hours for each three hours of laboratory.

C=Class Hrs. Per Week L=Lab Hrs. Per Week CH=Credit Hrs.

automotive mechanics

rpose of Curriculum

This curriculum provides a training program for developing the basic
owledge and skills needed to inspect, diagnose, repair or adjust auto-
otive vehicles. Manual skills are developed in practical shop work.
horough understanding of the operating principles involved in the modern
tomobile comes in class assignments, discussion, and shop practice.

Complexity in automotive vehicles increases each year because of scien-
ic discovery and new engineering. These changes are reflected not only in
ssenger vehicles, but also in trucks, buses and a variety of gasoline-
wered equipment. This curriculum provides a basis for the student to
mpare and adapt to new techniques for servicing and repair as vehicles
e changed year by year.

b Description

Automobile mechanics maintain and repair mechanical, electrical, and
dy parts of passenger cars, trucks, and buses. In some communities and
ral areas they also may service tractors or marine engines and other
soline-powered equipment. Mechanics inspect and test to determine the
uses of faulty operation. They repair or replace defective parts to restore
e vehicle or machine to proper operating condition. They use shop
anuals and other technical publications.

Automotive mechanics in smaller shops usually are general mechanics
alified to perform a variety of repair jobs. A large number of automobile
echanics specialize in particular types of repair work. For example, some
ay specialize in repairing only power steering and power brakes, or auto-
atic transmissions. Usually such specialists have an all-round knowledge
automotive repair and may occasionally be called upon to do other types
work.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			C	L
PME	1101	Internal Combustion Engines	3	1
MAT	1101	Fundamentals of Mathematics	5	
ENG	1101	Reading Improvement	2	
PHY	1101	Applied Science	3	
			13	1

Second Quarter			C	L
PME	1102	Engine Electrical and Fuel Systems	5	1
ENG	1102	Communications Skills	3	
DFT	1101	Schematics and Diagrams: Power Mechanics	0	
PHY	1102	Applied Science	3	
			11	1

Third Quarter			C	L
AUT	1123	Automotive Chassis and Suspension Systems	3	
AUT	1121	Braking Systems	3	
PSY	1101	Human Relations	3	
AHR	1101	Automotive Air Conditioning	2	
WLD	1101	Basic Gas Welding	0	
			11	1

Fourth Quarter			C	L
AUT	1124	Automotive Power Train Systems	3	
AUT	1125	Automotive Servicing	3	
BUS	1103	Small Business Operations	3	
			9	1

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machinist trade

pose of Curriculum

his curriculum was prepared to meet a definite need for training of chinists. Surveys recently completed in North Carolina show that many the existing industries lack time and facilities for training enough chinists to meet present and planned needs. Expanding industries already ited in our State and new industries under development invariably ress the need for skilled craftsmen who have the background knowledge potential to advance.

his guide is designed to give learners the opportunity to acquire basic ls and the related technical information necessary to gain employment build a profitable career in the machine shop industry in the State. It omprised of the joint views of committees responsible for its development.

Description

he machinist is a skilled metal worker who shapes metal parts by using hine tools and hand tools. His training and experience enable him to and carry through all the operations needed in turning out a machined luct and to switch readily from one kind of product to another. A hinist is able to select the proper tools and material required for each and to plan the cutting and finishing operations in their proper order so he can complete the finished work according to blueprint or written ifications. He makes standard shop computations relating to dimensions vork, tooling, feeds, and speeds of machining. He often uses precision suring instruments such as micrometers and gages to measure the racy of his work to thousandths of an inch.

his skilled worker must be able to set up and operate most types of hine tools. The machinist also must know the composition of metals hat he can heat and quench cutting tools and parts to improve machin- ity. His wide knowledge enables him to turn a block of metal into an cate, precise part.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L
MEC	1101	Machine Shop Theory and Practice	3	10
MAT	1101	Fundamentals of Mathematics	5	0
DFT	1104	Blueprint Reading: Mechanical	0	3
ENG	1101	Reading Improvement	2	0
PHY	1101	Applied Science	3	2
			13	15

Second Quarter

			C	L
MEC	1102	Machine Shop Theory and Practice	3	1
MAT	1103	Geometry	3	
DFT	1105	Blueprint Reading: Mechanical	0	
PHY	1102	Applied Science	3	
ENG	1102	Communication Skills	3	
			12	1

Third Quarter

			C	
MEC	1103	Machine Shop Theory and Practice	3	1
MEC	1115	Treatment of Ferrous Metals	2	
DFT	1106	Blueprint Reading: Mechanical	0	
MAT	1104	Trigonometry	3	
PSY	1101	Human Relations	3	
			11	1

Fourth Quarter

			C	
MEC	1104	Machine Shop Theory and Practice	3	1
MEC	1116	Treatment of Non-Ferrous Metals	2	
WLD	1101	Basic Gas Welding	0	
MAT	1123	Machinist Mathematics	3	
BUS	1105	Industrial Organizations	3	
			11	1

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mechanical drafting

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pose of Curriculum

his curriculum is designed to prepare students to enter the field of hanical drafting. The first two quarters contain courses basic to all ls of drafting. The third and fourth quarters contain specialization and ted courses that prepare one to enter mechanical drafting occupations.

ach course is prepared to enable an individual to advance rapidly in ting proficiency upon entering the field of work. Courses are arranged equence to develop drafting skills and proficiency in mathematics and nce. The draftsman associates with many levels of personnel—adminis- ve, architects, engineers, skilled workmen—and must be able to com- icate effectively with them. Courses to develop knowledge and skills in munication, human relations, economics and industrial organization provided to assist the student in developing understanding and con- nce in his relations with other persons.

Description

raftsman prepares clear, complete, and accurate working plans and iled drawings, from rough or detailed sketches or notes for engineering or ufacturing purposes, according to the specified dimensions: makes final ch of the proposed drawing, checking dimension of parts, materials to sed, the relation of one part to another, and the relation of the various s to the whole structure. Makes any adjustments or changes necessary esired. Inks in lines and letters on pencil drawings as required. Exer- manual skill in the manipulation of triangle, T-square, and other ing tools. Lays tracing paper on drawing and traces drawing in pencil ık. Makes charts for representation of statistical data. Makes finished gns from sketches. Utilizes knowledge of various machines, engineering tices, mathematics, building materials, and other physical sciences to plete the drawings.

chanical draftsman performs the general duties of a draftsman and pecializes in making rough drafting sketches of proposed mechanical

devices, and then drawing necessary details. Prepares accurate scale c
ings of parts or machines from specifications.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			C	L
DFT	1121	Drafting	3	1
MAT	1103	Geometry	3	
ENG	1101	Reading Improvement	2	
PHY	1101	Applied Science	3	
			11	1

Second Quarter			C	L
DFT	1122	Drafting	3	
DFT	1125	Descriptive Geometry	2	
MAT	1102	Algebra	5	
ENG	1102	Communications Skills	3	
PHY	1102	Applied Science	3	
			16	1

Third Quarter			C	L
DFT	1131	Mechanical Drafting	3	1
MAT	1104	Trigonometry	3	
PSY	1101	Human Relations	3	
MEC	1113	Shop Processes	2	
MEC	1115	Treatment of Ferrous Metals	2	
			13	1

Fourth Quarter			C	L
DFT	1132	Mechanical Drafting	3	1
MEC	1114	Shop Processes	2	
MEC	1116	Treatment of Non-Ferrous Metals	2	
BUS	1105	Industrial Organizations	3	
			10	

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courses of instruction

PREREQUISITES

Prerequisites are indicated for most courses offered at TIA. Th intended to give the student some measure of the proficiency expec those beginning a given course. In the event where other courses experiences might qualify the student to take the course, the instruct permit him to enroll.

AIR CONDITIONING AND REFRIGERATION

HR 101 Fundamentals of Refrigeration I 4 3° 5

erminology, laws of refrigeration, absolute pressure and absolute temperature,
gy conversion units; specific heat, latent heat, and sensible heat; measurement of
in quantity and intensity; tons of refrigeration, pressure temperature relationships,
fer of heat by conduction, convection and radiation; elementary refrigeration,
geration cycle and refrigerant controls. Tools, materials and methods applicable to
onditioning, and refrigeration.
equisite: None.

HR 102 Fundamentals of Refrigeration II 3 6° 5

frigerants and their application in commercial refrigeration; system components,
ssories, installation procedures and techniques; diagnosing service problems of
ianical difficulties; methods of defrosting; and making sketches for high, medium,
low temperature installation. Symbols for refrigeration and piping equipment will
sed in making sketches.
equisites: T-AHR 101, T-PHY 101.

IR 103 Commercial Refrigeration Systems Design 3 6° 5

ocedures of load calculating used in commercial refrigeration. Various types of
lations are studied with emphasis on the product to be cooled, the desired
eratures to be maintained, and humidity conditions. Problems involving system
ce and component capacity. Use of heat load charts, pipe sizing tables, manu-
red data, and specification sheets.
quisite: T-AHR 102.

IR 201 Heating Principles 3 4 5

rm air systems, heat emitters, electric heating, forced hot water and steam
ng systems including selection and sizing of equipment—registers, grills, furnaces,
s, radiators, baseboards, piping, and ducts. Fuels and burners used in supplying
for various types of heating systems—coal, oil, natural gas, manufactured gas,
ied petroleum gas, and electricity. Experiments in equipment selection, installation,
ing, and servicing will be conducted. Heating layout and specifications for an
ng structure or one in blueprint stage will be prepared.
quisites: T-PHY 101, T-DFT 102.

R 202 Fuels and Burners 2 3° 3

vanced course in heating systems with emphasis on new types of fuels and
rs. Demonstrations and experiments with mock-ups and sample systems of gas,
il and electrical installations. Experiments in equipment selection, installation,
aintenance will be conducted.
quisite: T-AHR 201.

R 203 Air-Conditioning Principles 5 6° 7

introduction to air distribution. Humidity, saturated and unsaturated mixtures;
metric charts and graphs; specific heat and air flow claculations, heat load
tions, the state of mixture of two air streams, bypass factor and dehumidification.
uisite: T-AHR 103.

T-AHR 209 Air-Conditioning System Design 5 6°

Practical procedures and data for calculating heat loss and heat gain in resic structures. Much of the data is secured from the ASHRAE guide and data bool Prerequisites: T-AHR 203, T-AHR 201.

T-AHR 210 Installation and Design Problems 2 6°

This course will consist of making drawings and designs that emphasize comn refrigeration and air-conditioning layouts. Information is gathered, calculatio made, schematic drawings are prepared, and specifications written for the sp installations.
Prerequisites: T-DFT 226; T-AHR 203.

T-AHR 216 Circuits and Controls I 3 3°

Electric, electronic and pneumatic controls as related to ventilation, refrigeratio air-conditioning systems. Practice in layouts, including symbols and schematic dia Laboratory work in installations of control systems. Test instruments and the System adjustments for proper operation.
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103.

T-AHR 217 Circuits and Controls II 3 3°

Practice in layouts, selection, installation and trouble-shooting of conve refrigeration and air conditioning control systems. Class and laboratory work i control of residential and commercial heating and air conditioning systems. problems of mechanical refrigeration, zone and central-fan systems. Unit heate ventilators, peripheral air conditioning units and radiant-panel heating are s
Prerequisites: T-AHR 103, T-AHR 201, T-PHY 103, T-AHR 216.

T-AHR 227 Estimating and Contracts 3 6°

Cost estimation, plans and specifications, equipment take-off, materials t labor take-off, sub-contractors' estimates, overhead cost, and bid and contract proc
Prerequisites: T-AHR 203, T-DFT 226.

T-AHR 228 Indoor Environmental Control 3 6°

Introduction to General Engineering data contained in the handbook of funda of the American Society of Heating, Refrigeration, and Air Conditioning Engine
Prerequisites: T-AHR 209, T-AHR 203.

T-AHR 230 Seminar and Research 1 4

Successful completion of the Air-Conditioning and Refrigeration Technology lum is climaxed by the student conducting a research project and writing a re this project. The student, through consultation with the instructors, will ch individual project that will, when feasible, involve an actual installation. F conferences with instructor will guide the student in the progress of research the preparation of the report.
Prerequisites: T-AHR 201, T-AHR 216, T-AHR 203.

AHR 1101 Automotive Air Conditioning 2 3

General introduction to the principles of refrigeration; study of the assembl components and connections necessary in the mechanisms, the methods of o

control; proper handling of refrigerants in charging the system.
equisite: PHY 1102.

1121 Principles of Refrigeration 5 6 7

introduction to the principles of refrigeration, terminology, the use and care of and equipment, and the identification and the function of the component parts of tem. Other topics to be included will be the basic laws of refrigeration; characteristics comparison of the various refrigerants; the use and construction of valves, fittings, basic controls. Practical work includes tube bending, flaring and soldering. Standard edures and safety measures are stressed in the use of special refrigeration service oment and the handling of refrigerants.
equisite: None.

1122 Domestic and Commercial Refrigeration 3 9 6

mestic refrigeration servicing of conventional, hermetic, and absorption systems. net care, controls, and system maintenance in domestic refrigerators, freezers, and ow air conditioning units is stressed. Commercial refrigeration servicing of display ets, walk-in cooler and freezer units, and mobile refrigeration systems is studied. use of manufacturers' catalogs in sizing and matching system components and a of controls, refrigerants, servicing methods is made. The American Standard Code for Refrigeration is studied and its principles practiced.
quisite: AHR 1121.

1123 Principles of Air Conditioning 5 6 7

rk includes the selection of various heating, cooling and ventilating systems, igation and control of factors affecting air cleaning, movement, temperature, and dity. Use is made of psychrometric charts in determining needs to produce um temperature and humidity control. Commercial air conditioning equipment embled and tested. Practical sizing and balancing of ductwork is performed as ed.
quisite: AHR 1122.

1124 Air Conditioning and Refrigeration Servicing
3 6 5

phasis is placed on the installation, maintenance, and servicing of equipment in the cleaning, changing, humidification and temperature control of air in an nditioning space. Installation of various ducts and lines needed to connect various nents is made. Shop work involves burner operation, controls, testing and adjusting conditioning and refrigeration equipment, and location and correction of ment failure.
quisite: AHR 1123.

1126 All Year Comfort Systems 3 6 5

iliary equipment used in conjunction with refrigeration systems to provide both g and cooling for "all year" comfort will be studied and set up in the laboratory. led will be oil fired systems, gas fired systems, water circulating systems, and c-resistance systems. Installation of heat pumps will be studied along with ing techniques. Reversing valves, special types of thermostatic expansion valves, s of de-icing coils, and electric wiring and controls are included in the study. uisites: AHR 1123, AHR 1128.

AHR 1128 Automatic Controls 3 6

Types of automatic controls and their function in air conditioning systems. Inc
in the course will be electric and pneumatic controls for domestic and commercial c
and heating; zone controls, unit heater and ventilator controls, commercia
systems controls, commercial refrigeration controls, and radiant panel controls.
Prerequisites: ELC 1102, AHR 1122.

AHR 1130 Duct Layout and Fabrication 2 2

Work in drafting room with instruments developing patterns on paper for p
duct fittings. Proper layout procedures are followed in work on plates including s
and radius elbows, offsets, transitions, "y" branches and square to round fittings.

ART (ART)

T-ART 105 History of Art 3 0

A study of the origins and development of art forms from the beginning th
contemporary. Lecture discussion documented with paintings, sculpture, reprodu
and films.
Prerequisite: None.

T-ART 106S Art History 4 0

A survey and analysis of major trends in architecture, painting, and sculpt
Western civilization. Pre-historic, Egyptian, ancient Near East, Aegean, Greek, Etr
Roman, early Christian, Byzantine, Islamic, early medieval, Romanesque, and
art.

T-ART 107S Art History 4 0

A continuation of T-ART 106S. Renaissance, Mannerist, Baroque, Neo-
Romantic, Realist, Impressionist, Post-impressionist, Expressionist, cubist, non-o
art, and twentieth century art are covered.

AUTOMOTIVE (AUT)

AUT 1121 Braking Systems 3 3

A complete study of various braking systems employed on automobiles and light
truck. Emphasis is placed on how they operate, proper adjustment, and repai
Prerequisite: PHY 1102.

AUT 1123 Automotive Chassis and Suspension Systems
3 8

Principles and functions of the components of automotive chassis. Practi
instruction in adjusting and repairing of suspension, and steering systems. Unit
studied will be shock absorbers, springs, steering systems, steering linkage, an
end and alignment.
Prerequisite: PME 1102.

1124 Automotive Power Train Systems 3 9 6

inciples and functions of automotive power train systems; clutches, transmission , torque converters, drive shaft assemblies, rear axles and differentials. Identification ubles, servicing, and repair.
quisites: PHY 1102, AUT 1123.

1125 Automotive Servicing 3 9 6

nphasis is on the shop procedures necessary in determining the nature of troubles loped in the various component systems of the automobile. Troubleshooting of notive systems, providing a full range of experiences in testing, adjusting, repairing eplacing.
quisites: AUT 1123, AUT 1121, AHR 1101.

BUSINESS ADMINISTRATION (BUS)

S 101 Introduction of Business 5 0 5

urvey of the business world with particular attention devoted to the structure of arious types of business organization, methods of financing, internal organization, nanagement.
quisite: None.

S 102 Typewriting I 2 3° 3

roduction to the touch typewriting system with emphasis on correct techniques, ry of the keyboard, simple business correspondence, tabulation, and manuscripts.
quisite: None.

S 103 Typewriting II 2 3° 3

ruction emphasizes the development of speed and accuracy with further mastery rect typewriting techniques. These skills and techniques are applied in tabulation, script, correspondnce, and business forms.
quisite: T-BUS 102 or the equivalent.

S 104 Typewriting III 2 3° 3

phasis on production typing problems and speed building. Attention to the pment of the student's ability to function as an expert typist, producing mailable . The production units are tabulation, manuscript, correspondence, and business

quisite: T-BUS 103 or the equivalent.

S 105S Typing Office Production 2 3 3

ourse to train the student who possesses basic skills to produce with efficiency ritten work that would be acceptable in the most exacting business offices. The t learns to think independently regarding style and method.
uisite: Permission of Department Head.

106 Shorthand I 3 2 4

eginning course in the theory and practice of reading and writing shorthand. sis on phonetics, penmanship, word families, brief forms, and phrases.
uisite: None.

T-BUS 107 Shorthand II 3 2

Continued study of theory with greater emphasis on dictation and elem
transcription.
Prerequisite: T-BUS 106 or the equivalent.

T-BUS 108 Shorthand III 3 2

Theory and speed building. Introduction to office style dictation. Empha
development of speed in dictation and accuracy in transcription.
Prerequisite: T-BUS 107.

T-BUS 110 Office Machines 2 2

A general survey of the business and office machines. Students will receive tr
in techniques, processes, operation and application of the ten-key adding ma
full keyboard adding machines, and calculator.
Prerequisite: None.

T-BUS 111 Secretarial Office Machines 2 2

Techniques in operating three basic office machines: ten-key, full-key, and
calculator. Problem solving activities that will require students to use correct m
operation to promote skill development in data processed in the business office.
Prerequisite: None.

T-BUS 112 Filing 3 0

Fundamentals of indexing and filing, combining theory and practice by the
cards, miniature letters, filing boxes and guides. Alphabetic, geographic, subje
numeric filing.
Prerequisite: None.

T-BUS 115 Business Law 3 0

A general course designed to acquaint the student with certain fundament
principles of business law, including contracts, negotiable instruments, and ag
Prerequisite: None.

T-BUS 116 Business Law 3 0

Includes the study of laws pertaining to bailments, sales, risk-bearing, part
corporation, mortgages, and property rights.
Prerequisite: T-BUS 115.

T-BUS 120 Accounting 5 2

Principles, techniques and tools of accounting, for understanding of the me
of accounting. Collecting, summarizing, analysing, and reporting informatio
service and mercantile enterprises, to include practical application of the pr
learned.
Prerequisite: T-MAT 110 or T-MAT 101.

T-BUS 121 Accounting 5 2

Partnership and corporation accounting including a study of payrolls, fede
state taxes. Emphasis is placed on the recording, summarizing and interpreti
for management control rather than on bookkeeping skills. Accounting serv
shown as they contribute to the recognition and solution of management p
Prerequisite: T-BUS 120.

US 122S Accounting 5 0 5

orporation accounting including study of issuing stock, subscriptions to stock and mption of stock. Long-term obligations and investments of corporations. Accounting departments and branches. Study of manufacturing operations and process cost em.
equisites: T-BUS 121.

JS 123 Business Finance 3 0 3

nancing of business units, as individuals, partnerships, corporations, and trusts. A led study is made of short-term, long-term, and consumer financing.
equisite: T-ECO 104.

JS 124 Business Finance 3 0 3

nancing, federal, state, and local government and the ensuing effects upon the omy. Factors affecting supply of funds, monetary and credit policies.
equisite: T-BUS 123.

JS 130 Secretarial Accounting 5 2 6

sic principles, procedures, and terminology of accounting, as related to secretarial s in the business office. Includes making entries, preparing financial statements nalyzing and interpreting financial data.
quisite: T-MAT 110.

JS 182M Anatomy 3 0 3

basic study of the general plan of the body and the nine systems, including common ses and health deviations.
quisite: None.

JS 183M Terminology and Vocabulary 3 0 3

develop an understanding of the terminology and vocabulary appropriate to the e of study, as it is used in the medical profession.
equisite: None.

S 183T Terminology and Vocabulary 3 0 3

develop an understanding of the terminology and vocabulary appropriate to the e of study, as it is used in business, technical, and professional offices.
quisite: None.

JS 205 Advanced Typewriting 2 3* 3

nphasis in placed on the development of individual production rates. The student s the techniques needed in planning and in typing projects that closely approximate vork appropriate to the field of study. These projects include review of letter , methods of duplication, statistical tabulation, and the typing of reports, manus and legal documents.
quisite: T-BUS 104.

T-BUS 206M Dictation and Transcription 3 2

Develops the skill of taking dictation and of transcribing at the typewriter ma appropriate to the course of study, which includes a review of the theory a dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: T-BUS 108.

T-BUS 206T Dictation and Transcription 3 2

Develops the skill of taking dictation and of transcribing at the typewriter m appropriate to the course of study, which includes a review of the theory a dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: T-BUS 108.

T-BUS 207M Dictation and Transcription 3 2

Covering materials appropriate to the course of study, the student develo accuracy, speed, and vocabulary that will enable her to meet the stenographic r ments of business and professional offices.
Prerequisite: T-BUS 206M.

T-BUS 207T Dictation and Transcription 3 2

Covering materials appropriate to the course of study, the student develo accuracy, speed, and vocabulary that will enable her to meet the stenographic r ments of business and professional offices.
Prerequisite: T-BUS 206T.

T-BUS 208M Dictation and Transcription 3 2

Principally a speed building course, covering materials appropriate to the co study, with emphasis on speed as well as accuracy.
Prerequisite: T-BUS 207M.

T-BUS 208T Dictation and Transcription 3 2

Principally a speed building course, covering materials appropriate to the c study, with emphasis on speed as well as accuracy.
Prerequisite: T-BUS 207T.

T-BUS 211 Office Machines 2 2

Instructions in the operation of the bookkeeping-accounting machines, dup equipment, and the dictating and transcribing machines.
Prerequisite: T-BUS 110 or T-BUS 111.

T-BUS 214 Secretarial Procedures 3 2

Designed to acquaint the student with the responsibilities encountered by a s during the work day. These include the following: receptionist duties, handl mail, telephone techniques, travel information, telegrams, office records, pu of supplies, office organization, and insurance claims.
Prerequisite: None.

T-BUS 215M Office Application 6 0

During the sixth quarter only, students are assigned to work in a medical c six hours per week. The objective is to provide actual work experience for se

lents and an opportunity for the practical application of the skills and knowledge viously learned, according to the course of study.
equisites: T-BUS 214, T-BUS 205, T-BUS 208M, T-BUS 211.

US 215T Office Application 6 0 6

uring the sixth quarter only, students are assigned to work in a business, technical, rofessional office for six hours per week. The objective is to provide actual work rience for secretarial students and an opportunity for the practical application of skills and knowledge previously learned, according to the course of study.
equisites: T-BUS 214, T-BUS 205, T-BUS 208T, T-BUS 211.

US 217 Business Law 3 0 3

study of the powers, policies, methods, and procedures used by the various ral, state and local administrative agencies in promoting and regulating business rprises. It includes a consideration of the constitutional and statutory limitations hese bodies and judicial review of administrative action.
equisite: T-BUS 116.

US 219 Credit Procedures and Problems 3 0 3

inciples and practices in the extension of credit; collection procedures; laws aining to credit extension and collection are included.
equisite: T-BUS 120.

US 225 Cost Accounting 3 2 4

ature and purposes of cost accounting; accounting for direct labor, materials, and ry burden; job cost, and standard cost principles and procedures; selling and ibution cost; budgets, and executive use of cost figures.
equisite: T-BUS 121.

226S Payroll Records and Accounting 3 0 3

study in the preparation of the payroll which includes: (1) Figuring basic wages, Deducting for taxes (FICA, FUTA, and Federal Income Taxes), and (3) Making ssary journal entries, as well as other problems encountered in preparing the oll.
equisite: T-BUS 120 or T-BUS 130.

JS 229 Taxes 3 2 4

plication of federal and state taxes to various businesses and business conditions. idy of the following taxes: income, payroll, intangible, capital gain, sales and use, e, and inheritance.
equisite: T-BUS 121.

JS 232 Sales Development 3 0 3

study of retail, wholesale and specialty selling. Emphasis is placed upon mastering applying the fundamentals of selling. Preparation for and execution of sales nstrations required.
quisite: None.

T-BUS 223 Personnel Management 3 0

Principles of organization and management of personnel, procurement, plac training, performance checking, supervision, remuneration, labor relations, benefits and security.
Prerequisite: None.

T-BUS 235 Business Management 3 0

Principles of business management including overview of major functions of m ment, such as planning, staffing, controlling, directing, and financing. Clarifica the decision-making function versus the operating function. Role of managem business—qualifications and requirements.
Prerequisite: None.

T-BUS 237 Wholesaling 3 0

The development of wholesaling; present day trends in the United States. A of the functions of wholesaling.
Prerequisite: None.

T-BUS 239 Marketing 5 0

A general survey of the field of marketing, with a detailed study of the fu policies, and institutions involved in the marketing process.
Prerequisite: ECO 104.

T-BUS 243 Advertising 4 0

The role of advertising in a free economy and its place in the media of mas munications. A study of advertising appeals; product and market research; sele media; means of testing effectiveness of advertising. Theory and practice of advertising copy for various media.
Prerequisite: None.

T-BUS 245 Retailing 3 0

A study of the role of retailing in the economy including development of retail structure, functions performed, principles governing effective operati managerial problems resulting from current economics and social trends.
Prerequisite: None.

T-BUS 247 Business Insurance 3 0

A presentation of the basic principles of risk insurance and their application. A of the various types of insurance is included.
Prerequisite: None.

T-BUS 255 Interpreting Accounting Records 3 0

Designed to aid the student in developing a "use understanding" of acc records, reports and financial statements. Interpretation, analysis, and utiliz accounting statements.
Prerequisite: T-BUS 121.

BUS 266 Budget and Record Keeping 3 0 3

The basic principles, methods, and procedures for preparation and operation of dgets. Special attention is given to the involvement of individual departments and the e they play. Emphasis on the necessity for accurate record keeping in order to luate the effectiveness of budget planning.
requisite: T-BUS 121.

US 271 Office Management 3 0 3

resents the fundamental principles of office management. Emphasis on the role of ce management including its functions, office automation, planning, controlling, anizing and actuating office problems.
requisite: None.

US 272 Principles of Supervision 3 0 3

ntroduces the basic responsibilities and duties of the supervisor and his relationship uperiors, subordinates, and associates. Emphasis on securing an effective work force the role of the supervisor. Methods of supervision are stressed.
equisite: None.

US 284M Terminology and Vocabulary 3 0 3

reater emphasis on an understanding of the terminology and vocabulary appropriate ne course of study, as it is used in medical offices.
equisite: T-BUS 183M.

US 300S Current Trends in Business 2 4 4

esigned to aid the student to become more aware of current trends in the business d through reading, reporting, and informal discussions.
equisite: Advance standing in Business Administration.

1102 Typewriting 2 3 3

beginning course in touch typewriting, with emphasis on correct techniques, ery of the keyboard, simple business correspondence, and tabulation.
equisite: None.

1103 Small Business Operations 3 0 3

introduction to the business world, problems of small business operation, basic ness law, business forms and records, financial problems, ordering and inventorying, t of equipment and offices, methods of improving business, and employer-oyee relations.
quisite: None.

1105 Industrial Organizations 3 0 3

thods, techniques, and practices of modern management in planning, organizing ontrolling operations of a manufacturing concern. Introduction of the competitive n and the factors constituting product cost.
quisite: None.

CHEMISTRY (CHM)

T-CHM 101 Chemistry 4 2

Study of the physical and chemical properties of substances, chemical cha
elements, compounds, gases, chemical combinations; weights and measurements; th
of metals; acids, bases, salts, solvents, solutions, and emulsions. In addition, stu
carbohydrates; electrochemistry, electrolytes, and electrolysis in their applicatio
chemistry to industry.
Prerequisite: T-MAT 101.

T-CHM 102 Chemistry 4 2

General course in inorganic chemistry. Properties of acids, salts, bases, and solu
Chemical and physical properties of selected inorganic elements are studied in d
Laboratory work will consist of various inorganic tests and experiments.
Prerequisite: T-CHM 101.

T-CHM 111 General Chemistry 4 3°

An introductory chemistry course involving chemical terminology, atomic stru
properties of some elements, and the function of the periodic table. Properties of
pounds and mixtures are studied as are types of chemical reactions. Laboratory
consists of various inorganic reactions and preparations.
Prerequisite: None.

T-CHM 112 General Chemistry 4 3

A study of the properties of elements not covered in T-CHM 101 and a stu
greater depth of the combining properties of the elements including equivalent we
Laboratory work includes chemical reactions and an investigation of propert
solutions.
Prerequisite: T-CHM 111.

T-CHM 113S General Chemistry III 4 3

A continuation of T-CHM 112. The different families of elements are stud
detail, with emphasis on their sources, refining processes and chemical prop
Laboratory work will emphasize the properties of the different families of ele
Prerequisite: T-CHM 112.

T-CHM 121 Quantitative Chemical Analysis 3 6°

Emphasis is placed on developing laboratory techniques employed in the volu
analysis of acids and bases. The students will become thoroughly familiar wi
principles and procedures of neutralization titration. Classroom work will emp
the stoichiometric calculations involved in interpreting the results of analysis. Labo
work will consist of percentage analysis of selected substances.
Prerequisite: T-CHM 113.

T-CHM 222 Quantitative Chemical Analysis 2 9

The more complex types of quantitative analysis. Special emphasis on the
of oxidation-reduction and gravimetric analysis. Instrumental analysis is introduc
use of modern analytical devices is stressed. The student will become familiar w

nciples of redox reactions, ionization constants and pH of solutions. Stress is placed the stoichiometric calculations of quantitative chemical analysis. Classroom work nplements quantitative determinations in the laboratory.
requisite: T-CHM 121.

HM 227 Physical Chemistry 3 2 4

tomic theory, states of matter, chemical thermodynamics, molecular properties of itions, equilibria, phase role, electrochemistry, kinetics, surface chemistry, and tochemistry consitute major areas of study.
requisite: T-CHM 121.

HM 231 Organic Chemistry 3 6° 5

omenclature, structure, preparation, properties, and reactions of aliphatic organic npounds. Laboratory work emphasizes techniques.
requisite: T-CHM 222.

HM 232 Organic Chemistry 3 6° 5

he nomenclature, structure, preparation, properties, and reactions of aromatic anic compounds. Laboratory work emphasizes techniques and involves preparation analysis of selected organic compounds.
requisite: T-CHM 231.

HM 233S Organic Chemistry III 3 6 5

continuation of T-CHM 232. Polymers and other macro molecules will be studied detail with some emphasis on synthetic textile fibers. Laboratory work will be tered around Polymers.
requisite: T-CHM 232.

HM 241 Industrial Chemical Analysis 3 9° 6

n industrial laboratory situation is simulated. Principles and techniques learned revious quarters are utilized in solution of problems common to local industry. It be the responsibility of the instructor to determine and submit in outline form a ram of suitable scope and sequence of topics which he will work out from contion with his local advisory committee, representing the industry. This program be approved by the administration and accepted by the appropriate State-level ority.
equisite: T-CHM 222.

HM 242 Industrial Chemical Analysis 3 12° 7

industrial laboratory situation is maintained and the emphasis on instrumentation panded. Problems of industrial quality control. Plant visitations.
equisite: T-CHM 241.

IM 250S Qualitative Inorganic Analysis 2 4 4

neral principles involved in separation and identification of the more common n and anions. Laboratory practice in identifying the ions in a variety of unknowns.
quisite: T-CHM 112.

COMMERCIAL ART (CAT)

T-CAT 101 Advertising Principles 3 0

A comprehensive survey of the history and development of advertising includ discussion of its economic and social values. An introduction to advertising medi current publications in the field.
Prerequisite: None.

T-CAT 105 Life Study 2 3°

A study of the body structure with emphasis on the skeletal and muscular sy movement and the aging process. Graphical interpretation and response to live r with emphasis on proportioning, masses and movement.
Prerequisite: None.

T-CAT 106 Life Study 0 6

Graphical interpretation and response to the live model covering topics su proportioning, the aging process, character, expression and draping the model course will deal with building of the figure and such ingredients.

T-CAT 116 Photography 2 6°

An introduction to the field of photography, photographic equipment and ma A study of the fundamental techniques of the camera and its expressive possibili relation to the field of design and visual communications. Assigned camera p darkroom procedures and equipment.
Prerequisite: None.

T-CAT 121 Commercial Art & Advertising Design 3 9°

An introduction to drawing and basic design fundamentals and principles. E is placed on line, two and three-dimensional shapes, letter indication, ske perspective, light and shade, equipment and materials of the art and design pro
Prerequisite: None.

T-CAT 122 Commercial Art & Advertising Design 3 9°

Advanced material in drawing, basic design, lettering, equipment and ma Emphasis placed on two and three-dimensional form, perspective, sketching, rou finished lettering. Laboratory will consist of assigned graphical problems with and discussion by class participation.
Prerequisite: T-CAT 121.

T-CAT 123 Commercial Art & Advertising Design 3 9°

Introduction to layout and design for printing. Mechanics of layout, prope type, and basic reproductive processes. Laboratory exercises will consist of pre of comprehensive art form for presentation on magazine covers, trademark covers, textile designs, furniture designs, two and three-dimensional display Assigned graphical problems with critique and discussion by class members.
Prerequisite: T-CAT 122.

AT 205 Advertising Copywriting 3 0 3

study of the techniques used in creating effective advertising copy for various es of media; purposes and duties of the copywriter and legal problems encountered opywriting. Theory and practice will be given in writing copy for the various ia including retail and fashion copy, mail order, direct mail, business publications, o and television.
equisite: T-ENG 102.

AT 212 Advertising Illustration 1 3° 2

n introduction to advertising illustration through problems in shape, space, and t analysis. Laboratory exercises will explore the use of various media.
equisite: T-CAT 121.

AT 213 Advertising Illustration 1 3 2

dvanced work and assigned problems in advertising illustration. The student is d to explore a variety of mediums.
equisite: T-CAT 212.

AT 214 Advertising Illustration 1 3° 2

ssigned problems in advanced illustration. Emphasis is placed on originality and readiness of the student to explore assigned graphical tasks and problems.
equisite: T-CAT 213.

AT 217 Photography 2 6° 4

dvanced photographic techniques and materials. Participation in studio and ratory procedures illustrating the various applications of photography in visual munications.
equisite: T-CAT 116.

AT 224 Commercial Art & Advertising Design 3 9° 6

n introduction to cartooning, intermediate layout and design techniques for printing. ratory assigned graphical problems will cover such topics as color separation, ones, and materials for the development of posters, show cards, banners, hand-red documents, brochures and folders.
equisite: T-CAT 123.

AT 225 Commercial Art & Advertising Design 3 9° 6

lvanced problems in layout and design techniques for printing, illustration, oning, animation, display design and lettering. Laboratory and graphic problems ng with magazine and book illustrations, the fashion figure, outdoor sign writing, ays and exhibits for business and industry.

T 226 Commercial Art & Advertising Design 3 9° 6

course providing simulated professional working conditions utilizing advanced t and design techniques for printing. Each student will explore a variety of ems, and present his solutions for general class critique and discussion. This will climax with the review and presentation of the student's individual olio of professional work.
quisite: T-CAT 225.

T-CAT 231 Painting with Polymers 2 6

An introduction to the medium: a study of the techniques used in paintin illustration with the relatively new acrylic polymer emulsions. Students may projects or complete assigned projects.
Prerequisite: None.

T-CAT 235 Advertising Art Direction 5 0

A study of the techniques used in creating effective advertising for various ty media. The physical consideration of the advertisement such as size, position, frequency of insertion, layout, coupons and inquiries. Analysis of techniques tc in national, retail, mail order, industrial and professional advertising with conside given to budgetary practices.
Prerequisite: T-CAT 101.

T-CAT 239 Selective Media 2 3

Designed to give students an opportunity to work in a variety of media not oth studied.

The media selected to meet the needs and interests of the class will include: ture, ceramics, mono-prints, silk-screen printing, lithography, metal enamelin painting with oils, polymers, and acrylics.
Prerequisite: None.

T-CAT 240 Metal Sculpturing 1 3

An introduction to metal as a media of expression in time and space. The ba of welding, brazing, and soldering will be taught.
Prerequisite: CAT 121.

DENTAL (DEN)

DEN 1001 Introduction to Dental Assisting 2 0

An introduction to the history of dental assisting, the modern role of the assistant in practice and in relation to other members of the dental health tea the personal and ethical requirements for safe and effective practice.
Prerequisite: None.

DEN 1002 Dental Materials 2 9

Identification of dental materials, characteristics of each, evaluation of quali principles and procedures related to manipulation and storage of various materials.
Prerequisite: None.

DEN 1003 Preclinical Sciences I 3 3

Basic information from bacteriology, anatomy and physiology, and oral and anatomy as related to dental science and the practice of dental assisting. Desi three units which may be scheduled for either concurrent or sequential t
Prerequisite: None.

EN 1004 Preclinical Sciences II 4 0 4

Fundamental information from oral pathology, pharmacology, nutrition, and common
ergencies as related to the role of the dental assistant. Designed in four units to
rmit flexibility in scheduling.
erequisite: DEN 1003.

EN 1005 Dental Accounting 3 2 4

Fundamentals of accounting as applied to dental office procedures. Practice in
plication of principles to various forms commonly used in the dental office.
erequisite: None.

EN 1006 Clinical Procedures I 5 9 8

Principles and procedures related to radiology, dental instruments and equipment,
l chairside techniques of dental assisting. Designed in three units for flexibility in
eduling.
erequisite: DEN 1002.

EN 1007 Clinical Procedures II 5 6 7

Role of the dental assistant in various dental specialties, such as endodontics,
iodontics, orthodontics, prosthodontics, and oral surgery.
erequisite: DEN 1006.

EN 1008 Dental Office Management 4 3 5

Principles and procedures related to management of the dental office, including
intenance of inventories, ordering of supplies, patient records, financial records,
king appointments and establishing favorable patient relations.
requisite: DEN 1005.

N 1009 Dental Office Practice I 0 12 4

ntroduction to practice in the dental office or dental clinic, emphasis is on the
of the dental assistant in the operatory in a variety of dental procedures.
requisite: DEN 1008.

N 1010 Dental Office Practice II 0 30 10

ractice in the dental office or dental clinic; rotation of assignments to encompass
erience in office management, the dental laboratory, and the operatory. Emphasis on
irside assisting in a variety of clinical procedures.
requisite: DEN 1009.

N 1011 Dental Assistant Seminar 1 0 1

tudy of personal responsibilities as a practitioner, including employee-employer
tions, opportunities for continued development as a person and as a health worker,
importance of organization membership.
requisite: None.

DESIGN (DES)

T-DES 105 Technical Sketching 0 6°

Basic skills in freehand sketching. Experience in the techniques of two dimen
and orthographic sketching. Mechanical and natural objects, including anatomy.
Prerequisite: None.

T-DES 115 Art Appreciation 4 0

To equip the student with a knowledge of why man has developed art. To
basis for study of design, techniques, and use of media in past art to relate its inf
on art today and to develop an appreciation for art: design, color, etc.
Prerequisite: None.

T-DES 150 Technical Illustration 3 9°

Introduction to Technical Illustration. A study of isometric theory dealing witl
tools and equipment.
Prerequisite: T-DFT 102.

T-DES 251 Technical Illustration II 3 6°

A continuation of the study of basic technical illustration theory, tools and equi
Various types of templates, layouts and projections.
Prerequisite: T-DES 150.

T-DES 252 Technical Illustration III 3 6°

A development of the techniques necessary to utilize the materials and equipr
the illustrator. A study of axonometric theory and use in illustrations. Project m
from previous courses will be used as problem assignments.
Prerequisite: T-DES 251.

T-DES 253 Technical Illustration IV 3 9°

A study of the various mechanical devices used to produce illustrations and tl
involved in using these materials. A time and materials record will be kept t
student on each project. As much as possible industrial type projects will be as
Prerequisite: T-DES 252.

T-DES 256 Seminar Technical Illustration 3 3°

Seminar to consist of field trips, guest speakers, and the utilization of form
material to develop a presentation portfolio.
Prerequisite: T-DES 252.

T-DES 260 Technical Rendering 1 3°

Develops skills and techniques in rendering. Stresses technical and presentat
as well as reproducing such art.
Prerequisite: T-CAT 122.

T-DES 262 Technical Publications 1 3°

A study of methods of producing diagrams and handbook illustrations for t
publications.
Prerequisite: T-DES 251.

DES 280 Special Projects 1 6° 3

Provides opportunity for special learning experience in the technical illustration field the student, according to his area of interest. May include exposure to model building, play techniques, audio-visuals, reproduction media, and other fields utilized within gineering departments for the presentation of new visual ideas.
erequisite: T-DES 251.

DRAFTING (DFT)

DFT 101 Technical Drafting 2 4 3

The field of drafting is introduced as the student begins study of drawing principles l practices for print reading and describing objects in the graphic language. Basic lls and techniques of drafting included are: use of drafting equipment, lettering, ehand orthographic and pictorial sketching, geometric construction, orthographic trument drawing of principal views, and standards and practices of dimensioning. e principles of isometric, oblique, and perspective are introduced.
erequisite: None.

DFT 102 Technical Drafting 2 4 3

The application of orthographic projection principles to the more complex drafting oblems, primary and secondary auxiliary views, simple and successive revolutions, l sections and conventions will be studied. Most important is the introduction of graphic analysis of space problems. Problems of practical design elements olving points, lines, planes, and a combination of these elements shall be studied. mensioning practices for "details" and "working drawings," approved by the erican Standards Association will also be included. Introduction is given to inter-ctions and developments of various types of geometrical objects.
erequisite: T-DFT 101.

DFT 103 Technical Drafting 1 6° 3

Intersection and developments and their practical solutions. Where applicable, odel solutions accompany the problems. The various techniques employed to produce l render isometric and oblique drawings, isometric, dimetric and trimetric projections, ll be included.
erequisite: T-DFT 102.

DFT 201 Technical Drafting 2 6° 4

Applications and constructions of charts, graphs, and nomographs in engineering and hnical data. Screw threads, springs, keys, rivets, piping, and welding symbols, thods of representing and specifying will be covered. Basic mechanisms of motion nsfer, gears and cams, will be studied and drawn with emphasis on methods of ecifying, calculating, dimensions, and delineating.
erequisite: T-DFT 103.

DFT 204 Descriptive Geometry 2 4 4

Graphic analysis of space problems involving points, lines, planes, connectors, and ombination of these. Practical design problems will be stressed with analytical ification where applicable. Visualization shall be stressed on every problem.
erequisite: T-DFT 102.

T-DFT 205 Design Drafting I 2 6°

Basic design is introduced in the study of motion transfer mechanisms as they to power trains. Principles of design sketching, design drawing, layout dra detailing from layouts, production drawings and simplified drafting practices cons areas of study. Types and methods of specifying materials and workmanship a integral part of the course.
Prerequisites: T-DFT 204, T-MAT 102, T-PHY 102.

T-DFT 206 Design Drafting II 2 6°

Research to solve a problem in design by consulting various manuals, perio and through laboratory experiments. A written technical report, preliminary sketches, layout drawings, detail drawings, assembly and sub-assembly dra pictorial drawings, exploded pictorial assembly, patent drawings and specificatio required as a part of the problem.
Prerequisites: T-DFT 205, T-MEC 210.

T-DFT 211 Mechanisms 3 2

Mathematical and drafting room solutions of problems involving the princip machine elements. Study of motions of linkage, velocities and acceleration of within a link mechanism; layout methods for designing cams, belts, pulleys, gea gear trains.
Prerequisites: T-DFT 201 & 204, T-MAT 103, T-PHY 106.

T-DFT 212 Jig and Fixture Design 2 6°

Commercial standards, principles, practices and tools of jig and fixture Individual project and design work to acquaint students with the types of jig fixtures and their design.
Prerequisites: T-DFT 205, T-DFT 211.

T-DFT 226 Air-Conditioning Systems Drawing 0 6°

Drawing of air-conditioning systems and study of related architectural and str elements. Sheet metal intersections and developments and types of duct instal Air-conditioning and refrigeration layouts, diagrams, and schematics.
Prerequisites: T-DFT 102, T-AHR 103, T-AHR 201, T-AHR 216.

DFT 1101 Schematics & Diagrams: Power Mechanics
0 3

Interpretation and reading of blueprints. Development of ability to read and in blueprints, charts, instruction and service manuals, and wiring diagrams. Infor on the basic principles of lines, views, dimensioning procedures, and notes.
Prerequisite: None.

DFT 1104 Blueprint Reading: Mechanical 0 3

Interpretation and reading of blueprints. Information on the basic principles blueprint; lines, views, dimensioning procedures and notes.
Prerequisite: None.

T 1105 Blueprint Reading: Mechanical 0 3 1

urther practice in interpretation of blueprints as they are used in industry; study of
ts supplied by industry; making plans of operations; introduction to drafting room
edures; sketching as a means of passing on ideas, information and processes.
equisite: DFT 1104.

T 1106 Blueprint Reading: Mechanical 0 3 1

dvanced blueprint reading and sketching as related to detail and assembly
vings used in machine shops. The interpretation of drawings of complex parts and
hanisms for features of fabrication, construction and assembly.
equisite: DFT 1105.

T 1116 Blueprint Reading: Air Conditioning 1 3 2

specialized course in drafting for the heating, air conditioning and refrigeration
lent. Emphasis will be placed on reading of blueprints that are common to the
e; blueprints of mechanical components, assembly drawings, wiring diagrams and
ematics, floor plans, heating system plans including duct and equipment layout
s, and shop sketches. The student will make tracings of floor plans and layout
conditioning systems.
equisite: DFT 1122.

T 1121 Drafting 3 12 7

n introduction to drafting and the study of drafting practices. Instruction is given in
selection, use and care of instruments, singlestroke lettering, applied geometry,
hand sketching consisting of orthographic and pictorial drawings. Orthographic
ection, reading and instrument drawing of principal views, single auxiliary views
nary), and double (oblique) auxiliary views will be emphasized. Dimensioning and
practices will be studied with reference to the American Standards Association
tices. Methods of reproducing drawings will be included at the appropriate time.
equisite: None.

T 1122 Drafting 3 6 5

he trainee will study simple and successive revolutions and their applications to
tical problems. Sections and conventions will be studied and both detail and
mbly sections will be drawn. Intersections and developments will be studied by
ting the drawing to the sheet metal trades. Models of the assigned drawings will be
le from construction paper, cardboard, or similar materials as a proof of the solution
he problems drawn.

lethods of drawing and projecting axonometric, oblique, and perspective drawings
be studied with emphasis on the practical applications of pictorial drawings.
ous methods of shading will be introduced and dimensioning and sectioning of
que and axonometric pictorials will be done.
equisite: DFT 1121.

T 1125 Descriptive Geometry 2 3 3

raphical analysis of space problems. The problems deal with practical design
ents involving points, lines, planes, connectors, and a combination of these.
uded are problems dealing with solid geometry theorems. Where applicable, each
hical solution shall be accompanied by the analytical solution.
equisite: DFT 1121.

DFT 1131 Mechanical Drafting 3 12

An introduction to mechanical drafting beginning with problems concerning prec and limit dimensioning. Methods of fastening materials, and fasteners: keys, r springs, and welding. Symbols will be studied and drawings will be made invo these items. Principles of design will be introduced with the study of basic mechai of motion transfer; gears, cams, power trains, pulleys, belting and methods of speci and calculating dimensions will be studied. Drawings will be made involving mechanisms.
Prerequisite: DFT 1122.

DFT 1132 Mechanical Drafting 3 12

Principles of design sketching, design drawings, layout drafting, detailing layout drawings, production drawings and simplified drafting practices constitute of study. Forging and casting drawings will be made from layouts. Specifications, list and bill of materials are emphasized in this course. The student will deve complete set of working drawings of a tool, jig, fixture or simple machine and principles of design, handbook and manual usage.
Prerequisite: DFT 1131.

ECONOMICS (ECO)

T-ECO 102 Economics 3 0

The fundamental principles of economics including the institutions and pra by which people gain a livelihood. Included is a study of the laws of suppl demand and the principles bearing upon production, exchange, distribution, consumption both in relation to the individual enterprise and to society at large
Prerequisite: None.

T-ECO 104 Economics 3 0

Greater depth in principles of economics, including a penetration into the compo and pricing of national output, distribution of income, international trade and fi and current economic problems.
Prerequisite: T-ECO 102.

T-ECO 106 Economics of Transportation 3 0

Acquaints the student with the economic aspects of transportation. Complet cussion from the earliest form of basic transportation to our present complex of transportation. In addition to the historical approach, consideration is giv the economic factors involved in plant location and principles involved in prese developments of transportation.
Prerequisite: T-ECO 102.

T-ECO 108 Consumer Economics 3 0

Designed to help the student use his resources of time, energy, and money the most out of life. It gives the student an opportunity to build useful sk buying, managing his finances, increasing his resources, and to understand bett economy in which he lives.
Prerequisite: None.

ELECTRICAL (ELC)

-ELC 101 Fundamentals of Electricity 4 4 or 6 6

Elementary principles of electricity including: basic electric units, Ohms law, rchhoffs law, network theorems, magnetics, basic electrical measuring instruments, ductance, capacitance, sine wave analysis, and non-resonant resistive, inductive d capacitive networks.
erequisite: None.

-ELC 102 Fundamentals of Electricity 4 4 or 6 6

Series and parallel resonant-circuit analysis, resonant and non-resonant transformer alysis, basic diode power supply analysis, introduction to non-linear resistive control vices, and introduction to electro-mechanical devices.
erequisite: T-ELC 101.

-ELC 201 Electrical Machinery 3 0 3

A course in the basic understanding and application of electricity to modern dustrial machinery. Included is a study of direct current motors, motor controls and otecting devices, transformers, and the industrial applications of this equipment.
erequisite: T-PHY 103.

ELC 210 Rotating Devices 2 2 3

Introduction to electrical machinery. AC and DC motor and generator principles, nchros and servomechanism, alternators and dynamotors, Ward-Leonard and am-dyne control systems will be analyzed. A general knowledge of the theory, operation, d maintenance of these devices and systems will be stressed.
erequisites: T-ELC 102, T-PHY 102.

C 1102 Applied Electricity 2 3 3

The use and care of test instruments and equipment used in servicing electrical paratus for air conditioning and refrigeration installations. Electrical principles and ocedures for trouble-shooting of the various electrical devices used in air conditioning, ating, and refrigeration equipment. Included will be transformers, various types of tors and starting devices, switches, electrical heating devices and wiring.
erequisite: PHY 1101.

C 1112 Direct and Alternating Current 5 15 10

A study of the structure of matter and the electron theory, the relationship between ltage, current and resistance in series, parallel and series-parallel circuits. Analysis direct current circuits by Ohm's law and Kirchhoff's law; sources of direct current tentials. Fundamental concepts of alternating current flow; a study of reactance, pedance, phase angle, power and resonance and alternating current circuit analysis.
erequisite: None.

ELECTRONIC DATA PROCESSING (EDP)

EDP 103 Introduction to Computer Concepts 4 0 4

An introductory course in computers for the student who plans to pursue the degree data processing as well as the student who desires a general non-technical knowledge

of terminology and concepts. No previous knowledge or experience in data proces
is required.
Prerequisite: None.

T-EDP 105 Keypunching 2 6

A study of the keypunch machine. Instruction emphasizes the correct technic
mastery of the keyboard and development of speed and accuracy. The student learns
drills on the numeric keyboard, the alphameric keyboard and program drum card
preparation and use.
Prerequisite: None.

T-EDP 110 Functional Wiring 3 2

A study of unit record procedures and operating practices. Student laboratory
emphasizes concepts of punched-card data processing equipment.
Prerequisite: None.

T-EDP 114 Compiler Language I 2 4

A fundamental course in Fortran or PL/1 programming. The Fortran or
language structure, statements and programming methods and techniques are stu
The student will develop program logic and programs for solving sample problen
Prerequisite: T-EDP 103.

T-EDP 116 Assembly Language 2 4

The study of symbolic computer languages with emphasis on a particular exa
of such a language. The student will develop program logic and write programs
assembly language to solve appropriate assigned problems.
Prerequisite: T-EDP 103.

T-EDP 118 Compiler Language 2 4

This course is designed to provide basic training in COBOL programming.
COBOL language structure, statements, and programming methods and techn
are studied. The student will develop program logic and write COBOL progran
solving sample problems.
Prerequisite: T-EDP 103.

T-EDP 211 Data Processing Application I 2 4

This course is designed to provide the student with sufficient knowledge in com
methodology to permit the use of computers in business. Emphasis will center ar
the computer environment with an in-depth study of the integration of the com
within business and industry.
Prerequisite: T-EDP 118.

T-EDP 212 Data Processing Application II 2 4

This course emphasizes the preparation and utilization of operations data used
typical business, case problems involving systems established for collecting the
and generating information for organizational units are studied. Audit traits ena
the tracing of transactions back to the original source or forward to the first repo

alyzed. Simulated data is used to demonstrate programming techniques (using)BOL) required in processing management information. Statistical analysis programng using a scientific language is studied as an aid to business decision making. erequisites: T-EDP 114, T-EDP 211, T-EDP 214.

EDP 213 Computer Systems I 2 2 3

A study of computer systems involving such concepts of architecture and/or proımming as channels, interrupts, multiprogramming, job scheduling and job control ıguage.
erequisite: T-EDP 116.

EDP 214 Computer Systems II 2 2 3

A continued study of computer systems. This course will include hardware systems d programming for operating systems, file devices, file organization, teleprocessing d system utilities.
erequisite: T-EDP 213.

EDP 215 Statistical Programming 2 4 4

Practical experience in the statistical solution of business problems through the use computers. Measures of central tendency, variation, confidence intervals, tests of pothesis, and relationships between variables. Methods of organizing, analyzing, erpreting and presenting data are studied.
erequisite: T-EDP 114, T-MAT 214.

EDP 217 Numerical Analysis Programming 2 4 4

A development of the mathematical principles upon which many computing methods based. Topics introduced include theory of errors, numerical integration and ferentiation, summation procedures, numerical solution of equations, and approxitions of various types.
erequisites: T-EDP 114, T-MAT 201.

EDP 218 Data Processing Project 1 8 5

Individual assignments of a carefully selected project will be the work of the student ring this course. It will give the student an opportunity to initiate and carry out a ject taken from outside the school. This course places the responsibility upon the dent to solve a significant problem with a minimum of assistance from the instructor. requisite: Sixth quarter standing and approval of instructor.

ELECTRONICS (ELN)

LN 101 Electronic Instruments and Measurements
1 4 or 6 3

A study of basic electronic instruments, their theory of operation, function, tolerances, l calibration. Both service and laboratory instruments will be studied. Laboratory erience will provide application of each type instrument studied.
requisite: T-ELC 102.

T-ELN 105 Control Devices 5 4 or 6

A study in depth of the electrical characteristics of vacuum tubes and transis Basic parameters and applications of each type device to the three configurations three terminal two port system will be included.
Prerequisite: T-ELC 102.

T-ELN 110 Introduction to Electronics 3 0

An overview of the field of electronics and its interrelation to other scientific fi Electrical, electronic, and electromechanical devices and their schematic representa are covered. Includes demonstrations, current films, and field trips to local indus
Prerequisites: None.

T-ELN 201 Industrial Controls 3 2

Industrial controls is the study of modern methods of controlling machiner electronic circuitry. Machinery controls and electronic mechanisms that automati operates machines will be studied. Types of motors, generators, control signals devices, thyratrons, gates, switches, and servomechanism circuits are major are study.
Prerequisite: T-PHY 103.

T-ELN 205 Applications of Vacuum Tubes and Transistors
5 4 or 6

Practical applications of vacuum tubes and transistors to basic audio ampli radio frequency amplifiers, detectors, modulators and oscillators.
Prerequisite: T-ELN 105.

T-ELN 208 Solid State Thin Film Devices 5 2

A study of the processes by which thin-film and semiconductor circuits are fabri Oxide isolation and metal-oxide-semiconductor field-effect transistors are cover length.

Various types of applications are presented such as, logic networks, the computer- slice concept, the use of feedback in integrated circuits, tuned integrated circuits, film thermollectrics, and microwave applications of integrated-circuit techniques
Prerequisite: T-CHM 111.

T-ELN 210 Semiconductor Circuit Analysis 5 2 or 3

A study in some depth of the analysis and design of transistor circuits. Ne theorems and equivalent circuits are used extensively in evaluating total performance. Device peculiarities and limitations pertinent to reliable operatio considered. H. Y. Z. and T. parameters are employed as well as signal-flow g
Prerequisite: T-ELN 105.

T-ELN 214 Wave Shaping and Pulse Circuits 2 2 or 3

Broadband amplifiers, magnetic amplifiers, multivibrators, wave shaping techn chopper amplifiers, clipper and clamper circuits.
Prerequisites: T-ELN 105, T-MAT 103.

LN 215 Wave Shaping and Pulse Circuits 2 2 or 3 3

ılse techniques, diode switches, gates, step-counters, restorers and other specific ıits which function as switches.
equisite: T-ELN 214.

LN 220 Electronic Systems 5 4 or 6 7

block diagram course investigating numerous electronic systems. Modules or ks of various circuits already studied are arranged in various manners to produce plex electronic systems. Systems will be explained and reduced to functions and to block diagrams. AM, FM, and Single Sideband transmitters and receivers, ıplexing, TV transmitters and receivers, pulse-modulated systems, computers, netry, navigational systems, sonar and radar will be considered.
quisite: T-ELN 215.

LN 225 Transmission and Propagation 3 0 3

introduction to the electromagnetic radiation, principles of antenna, radiation rns and field strength. The characteristics and use of transmission lines in radio ency application. Factors involved in propagation, ground waves, reflections, waves, atmospheric effects, ionosphere, fading, noise, static, wire radiators, directive , effect of ground impedance, antenna systems and arrays.
equisite: T-ELN 105.
quisite: T-ELN 205.

N 227 UHF and Micorwave Systems 5 4 7

study of UHF and VHF components, circuits, and measurement techniques. The f distributed constant elements, waveguides and coaxial cables, microwave links, frequency oscillators, magnetrons, klystrons, traveling wave tubes. An introduction use of the Smith Chart.
quisite: T-ELN 225.

N 230 Television Systems 4 6 7

tudy of the principles of television including the television system, camera tubes, ing and synchronization, composite video signal, receiver circuits, transmitting ment, color television, and closed-loop systems.
uisite: T-ELN 214.

N 235 Industrial Instrumentation 4 6 7

ad introduction to use of industrial electro-mechanical and electronic circuits quipment. Provides an understanding of the methods, techniques, and skills ed for installation, service and operation of a variety of industrial control systems. sis of sensing devices for detecting changes in pressure, temperature, humidity, , light, electricity, the associated circuitry and indicating and recording devices.
uisites: T-ELN 205, T-PHY 104.

N 240 Digital Computers 3 0 3

exploration into the methodology of counting and computing. Various computer ques will be investigated including: non-sinusoidal waveforms, binary and

decade counters, industrial counters, readout devices, logic circuits, arithmetic cir storage devices, input-output devices, computer control, analog and digital conve
Prerequisite: T-ELN 214.

T-ELN 245 Electronic Design Project 0 4

Students are required to design and construct a project approved by the instr Includes selection of project, design, construction, and testing of completed pr Projects may include: AM or FM transmitters or receivers, amplifiers, test equip control devices, simple counters, lasers, masers, etc.
Prerequisite: T-ELN 205.

ENGLISH

T-ENG 101 Composition I 3 0

Through a functional study of grammar, the course is designed to aid the stud the improvement of self-expression through the study of basic writing skills.

Emphasis is on vocabulary, sentence structure, and paragraph building.
Prerequisite: Successful score on English entrance test.

T-ENG 102 Composition II 3 0

A continuation of English 101, but the larger elements of composition will b phasized, including essay writing based on interpretive reading.
Prerequisite: T-ENG 101.

T-ENG 103 Report Writing 3 0

The fundamentals of English are utilized as a background for the organizati techniques of modern report writing. Exercises in developing typical reports, writing techniques and graphic devices are completed by the students. Pr application in the preparation of a full-length report is required of each student end of the term. This report must have to do with something in his chosen curri
Prerequisite: T-ENG 102.

T-ENG 204 Oral Communication 3 0

A study of basic concepts and principles of oral communications to ena student to communicate with others. Emphasis is placed on the speaker's a improving diction, voice, and the application of particular techniques of th correct speaking habits and to produce effective oral presentation. Particular at is given to conducting meetings, conferences, and interviews.
Prerequisite: T-ENG 101.

T-ENG 206 Business Communication 3 0

Develops skills in techniques in writing business communications. Business summaries of business conferences, letters, involving credit, collections, adju complaints, orders, acknowledgments, remittances, and inquiry.
Prerequisite: T-ENG 102.

T-ENG 208 Reading Enrichment 3 0

This course is designed to guide the student in a better understanding and a appreciation of our literary heritage.

n general, selected poetry, short stories, plays, and the novel will be studied. mphasis will be given to some of the influential and outstanding writers and ir contributions.

requisites: None.

NG 210 Advanced Writing 3 0 3

his course is designed for students who show potential and are interested in further uing writing skills.

pecialized techniques other than those used in general composition will be used with ial emphasis given to fiction.

ther genres will be covered according to student interest.

equisites: ENG 101, 102, 103, and permission of the instructor.

NG 212 Journalism I 2 2 3

course offering practical experience in newspaper production in connection with ublication of the school newspaper and other publications. Interviewing, reporting, editing will be covered with some emphasis being given to layout procedures. ents interested in photography will have an opportunity to utilize this media.

equisite: T-ENG 102.

1101 Reading Improvement 2 0 2

is course is designed to improve the student's ability to read more rapidly and rately. Special emphasis is put on vocabulary, study habits, comprehension, and iques.

equisite: None.

1102 Communication Skills 3 0 3

signed to promote effective communication through correct language usage in ing and writing.

quisite: ENG 1101.

1103 Report Writing 3 0 3

ndamentals of correct language usage applied to report writing. Emphasis is on iples of report construction and application to various report forms.

quisite: ENG 1102.

INDUSTRIAL SCIENCES (ISC)

T 100 Fundamentals of Mathematics 5 0 5

anizational structure for industrial management; operational and financial activities, ling accounting budgeting, banking, credit and industrial risk, forecasting of ts, selection and layout of physical facilities; selection, training and supervision of nel as found in typical industrial organizations.

uisite: None.

203 Motion Study 3 2 4

es of methods studies and their applications. Process charts, analysis sheets, tudy, work simplification, skill and effort ating.

uisite: None.

T-ISC 209 Plant Layout 3 2

A practical study of factory planning with emphasis on the most efficient arrange
of work areas to achieve lower manufacturing costs. Layouts for small and me
sized plants, layout fundamentals, selection of production equipment and mat
handling equipment. Effective management of men, money and materials in a
facturing operation.
Prerequisites: T-MEC 201, T-DFT 102.

MATHEMATICS (MAT)

T-MAT 100 Fundamentals of Mathematics 5 0

Practical number theory, analysis of basic operations; addition, subtraction, mu
cation and division. Fractions, decimals, powers and roots, percentages, ratio an
portion, plane and solid geometric figures used in industry; measurement of surfac
volumes. Introduction of algebra used in practical solution of problems also loga
and their use.
Prerequisite: None.

T-MAT 101 Technical Mathematics 5 0

The complex number system is developed as a super-set generated by funda
operations on the natural number set. Fundamental algebraic operations, linear
tions, rectangular coordinates, analytic geometry of a line, systems of linear equ
scientific notation, and vectors and right triangle trigonometry are introduced.
are taught in a manner which allows the student to use them in practical appli
Prerequisite: Satisfactory evidence that admission requirements have been met.

T-MAT 102 Technical Mathematics 5 0

T-MAT 102 is a continuation of T-MAT 101. Advanced algebraic and trigono
topics are studied in depth. Topics included are: quadratic and higher degree equ
roots, synthetic substitution, remainder and factor theorems, logarithmic and expo
functions and solutions of equations containing them, progressions, binomial expa
complex numbers, solution of oblique triangles, the general sine function, a
graphs of trigonometric functions.

T-MAT 103 Technical Mathematics 5 0

The fundamental concepts of analytic geometry and differential and integral c
are introduced. Topics included are the conic sections and the general quad
two variables, limits, derivatives, differentials, and indefinite and definite inte
algebraic functions.
Prerequisite: T-MAT 102.

T-MAT 110 Business Mathematics 5 0

This course stresses the fundamental operations and their application to
problems. Topics covered include payrolls, price marking, interest and discou
mission, taxes, and pertinent uses of mathematics in the field of business.
Prerequisite: None.

MAT 112 Business Mathematics for Data Processing 5 0 5

This is a course in Business Mathematics especially adapted to meet the needs of those dents who have chosen the Business Data Processing option. It includes a study of basic arithmetic methods of business calculations, record keeping, and problem ving. The mathematics necessary for a study of accounting is covered. In addition, ie insight into the understanding and use of more advance topics such as exponential logarithmic functions, as applied to business, is introduced.
requisite: T-MAT 101.

IAT 201 Technical Mathematics 5 0 5

continuation of T-MAT 103. More advanced concepts of differentiation and gration are considered. Included are graphs and derivatives of the trigonometric ctions, exponential and logarithmic differentiation and integration, advanced inte- tion techniques, polar equations, parametric equations and Fourier series.
requisite: T-MAT 103.

IAT 208 Calculus and Laplace Transforms for Electronics
5 0 5

n investigation of the methods of calculus which are of the most direct use in the ly of electronic circuits. Introduction to selected topics from differential equations Laplace transforms and applications of these methods to the solution of electronic uit problems.
requisite: T-MAT or T-ELN 214. (See ISI)

IAT 214 Statistics 5 0 5

he theory of statisitcs and its application in modern business. Kinds of regularity exist among random fluctuations. Experience in associating and using mathematical lels to interpret physical phenomena and predicting the outcomes of experiments ted to practical business problems.
equisite: T-MAT 102.

AT 219 Differential Equations 5 0 5

ethods of solving first-order and simple higher order ordinary differential equations linear differential equations with constant coefficients; solution of differential itions by series; and numerical solutions of differential equations.

T 1101 Fundamentals of Mathematics 5 0 5

actical number theory. Analysis of basic operations: addition, subtraction, multipli- n and division. Fractions, decimals, powers and roots, percentages, ratio and ortion. Plane and solid geometric figures used in industry; measurement of ces and volumes. Introduction to algebra used in trades. Practice in depth.
quisite: None.

1102 Algebra 5 0 5

sic concepts and operations of algebra: historical background of our base-10 er system; algebraic operations: addition, subtraction, multiplication and division;

fractions, letter representation, grouping, factoring, ratio and proportions, vari
graphical and algebraic solution of first degree equations; solution of simulta
equations by: addition and subtraction, substitution, graphing, exponents, logari
tables and interpolations.
Prerequisite: None.

MAT 1103 Geometry 3 0

Fundamental properties and definitions; plane and solid geometric figures, sel
general theorems, geometric construction of lines, angles and plane figures. Di
angles, areas of plane figures, volumes of solids. Geometric principles are appli
shop operations.
Prerequisite: None.

MAT 1104 Trigonometry 3 0

Trigonometric ratios; solving problems with right angles, using tables, and
polating; solution of oblique triangles using law of sines and law of cosines; gra
the trigonometric functions; inverse functions, trigonometric equations. All topi
applied to practical problems.
Prerequisite: MAT 1103.

MAT 1115 Electrical Mathematics 5 0

An introductory algebra course with trigonometry and vectors needed in alte
current: algebraic operations of addition, subtraction, multiplication and division;
letters and signs, grouping, factoring; exponents, ratios and proportions; algebra
graphic solutions of first-degree equations; introduction to trigonometric fun
their graphs and applications to right triangles, addition, subtraction and resolu
vector quantities.
Prerequisite: None.

MAT 1116 Electrical Mathematics 5 0

A working knowledge of the powers of 10, Ohm's law for series and parallel
quadratic equations, Kirchhoff's Laws, trigonometric functions, plane vectors,
nating currents, vector algebra and logarithms.
Prerequisite: MAT 1115.

MAT 1123 Machinist Mathematics 3 0

Introduces gear ratio, lead screw and indexing problems with emphasis on app
to the machine shop. Practical applications and problems furnish the traine
experience in geometric propositions and trigonometric relations to shop pr
concludes with an introduction to compound angle problems.
Prerequisite: MAT 1104.

MECHANICAL (MEC)

T-MEC 101 Machine Processes 0 6°

An introductory course designed to acquaint the student with basic han
safety procedures and machine processes of our modern industry. It will include
of measuring instruments, characteristics of metals and cutting tools. The
will become familiar with the lathe family of machine tools by performing
operations such as turning, facing, threading, drilling, boring, and reaming.

IEC 102 Machine Processes 0 6° 2

dvanced operations on lathe, drilling, boring and reaming machines. Milling machine ory and practice. Thorough study of the types of milling machines, cutters, jig and ire devices, and the accessories used in a modern industrial plant. Safety in the rational shop is stressed.
equisite: T-MEC 101.

IEC 110 Fundamental Mechanisms 2 4 4

study of the purpose and actions of cams, cables, gear trains, differentials, screws, s, pulleys, shafts, levers, and other mechanical devices used to transmit or control als.
equisite: T-PHY 102.

IEC 116 Engineering Materials 3 0 3

udy and testing of the properties of ferrous and non-ferrous metals and plastics, and strain measurements, behavior of materials under load, qualities other than gth and control of the properties of the materials.
equisite: T-PHY 102.

EC 205 Strength of Materials 3 2 4

udy of principles and analysis of stresses which occur within machine and structure ents subjected to various types of loads such as static, impact, varying and mic. Analyses of these stresses are made as applied to thin-walled cylinder and res, riveted and welded joints, beams, columns and machine components.
quisites: T-PHY 106, T-MAT 102.

EC 210 Physical Metallurgy 3 3° 4

troductory course in metallurgy, a basic study of the properties of metals and s. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, nuclear reactions. Solid (crystalline) structures, methods of designating crystal s, liquid and vapor phases, phase diagrams, and alloy systems.
quisites: T-PHY 101, T-CHM 111.

EC 211 Physical Metallurgy 3 3° 4

perties of metals and alloys, the reactions of metals, diffusion, carburizing, metal ing and homogenization, recrystallization and grain growth, age hardening, nitrid- nternal oxidation, heat treatment of steel, laboratory experiments and demonstra-

quisite: T-MEC 210.

C 213 Production Planning 3 3° 4

y-to-day plant direction; forecasting, product planning and control, scheduling, ching, routing, and inventory control. Case histories are discussed in the classroom, ourses of corrective action are developed. Drafting room layouts for planning ontrol.
quisite: T-DFT 102 or T-MEC 201.

T-MEC 235 Hydraulics and Pneumatics 3 3°

The basic theories of hydraulic and pneumatic systems. Combinations of sy in various circuits. Basic designs and functions of circuits and motors, co electrohydraulic servomechanisms, plumbing, filtration, accumulators and rese
Prerequisite: T-PHY 102.

T-MEC 237 Control Systems 2 4

Hydraulic, pneumatic, mechanical, electrical and electronic control system components. Basic description, analysis and explanation of operation. Typical formance characteristics, limitations on performance, accuracy, applications and utilization in industrial processes.
Prerequisites: T-PHY 102, T-ELC 201.

MEC 1101 Machine Shop Theory and Practice 3 10°

An introduction to the machinist trade and the potential it holds for craf Deals primarily with the identification, care and use of basic hand tools and pr measuring instruments. Elementary layout procedures and processes of lathe press, grinding (off-hand) and milling machines will be introduced both in theo practice.
Prerequisite: None.

MEC 1102 Machine Shop Theory and Practice 3 10°

Advanced operations in layout tools and procedures, power sawing, drill surface grinder, milling machine shaper. The student will be introduced to th operations of the cylindral grinder and will select projects encompassing operations, tools and procedures thus far used and those to be stressed through course.
Prerequisite: MEC 1101.

MEC 1103 Machine Shop Theory and Practice 3 10°

Advanced work on the engine lathe, turning, boring and threading ma grinders, milling machine and shaper. Introduction to basic indexing and term with additional processes on calculating, cutting and measuring of spur, helic worm gears and wheels. The trainee will use precision tools and measuring instr such as vernier height gages, protractors, comparators, etc. Basic exercises will b on the turret lathe and on the tool and cutter grinder.
Prerequisite: MEC 1102.

MEC 1104 Machine Shop Theory and Practice 3 10°

Development of class projects using previously learned procedures in pl blueprint reading, machine operations, final assembly and inspection. Ad processes on the turret lathe, tool and cutter grinder, cylindrical and surface advanced milling machine operations, etc. Special procedures and operations, p and equipment, observing safety procedures faithfully and establishing of goo habits and attitudes acceptable to the industry.
Prerequisite: MEC 1103.

C 1113 Shop Processes 2 3 3

tudy of practices used in metalworking shops; introduction to how materials can
utilized, and to the processes of shaping, forming and fabricating of metals.
nonstration of the metalworking lathes, grinders, drills, milling machines, shapers,
ers, saws, broachers, gear cutting machines and finishing machines. A study of the
abilities of these machines.
requisite: None.

C 1114 Shop Processes 2 3 3

omparison of the unit-production and mass-production systems. Casting, forging and
d processes, welding and sheet metal working processes are demonstrated and
ussed. Mass-production methods are studied in relationship to precision dimensional
trol.
equisite: MEC 113.

C 1115 Treatment of Ferrous Metals 2 3 3

vestigates the properties of ferrous metals and tests to determine their uses.
ructions will include some chemical metallurgy to provide a background for the
erstanding of the physical changes and causes of these changes in metals. Physical
llurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and
ing, heat treatments for steel, surface treatments, alloy of special steel, classification
eels, and cast iron will be topics for study.
equisite: None.

1116 Treatment of Non-Ferrous Metals 2 3 3

ontinuation of the study of physical metallurgy. The non-ferrous metals: bearing
ls, (brass, bronze, lead), light metals (aluminum and magnesium), and copper and
lloys are studied. Power metallurgy, titanium, zirconium, indium and vanadium are
deed in this course.
equisite: MEC 1115.

PHYSICS (PHY)

IY 101 Physics: Properties of Matter 3 2 4

fundamental course covering several basic principles of physics. The divisions
ded are solids and their characteristics, liquids at rest and in motion, gas laws and
cations. Laboratory experiments and specialized problems dealing with these topics
art of this course.
quisite: None.

IY 102 Physics: Work, Energy, Power 3 2 4

jor areas covered in this course are work, energy, and power. Instruction includes
topics as statics, forces, center of gravity, and dynamics. Units of measurement
their applications are a vital part of this course. A practical approach is used in
ing students the use of essential mathematical formulas.
quisites: T-MAT 101, T-PHY 101.

IY 103 Physics: Electricity 3 2 4

sic theories of electricity, types of electricity, methods of production, and trans-
n and transforming of electricity. Electron theory, electricity by chemical action,

electricity by friction, electricity by magnetism, induction voltage, amperage, resis
horsepower, wattage, and transformers are major parts of the course.
Prerequisites: T-MAT 101, T-PHY 101.

T-PHY 104 Physics: Light and Sound 3 2

A survey of the concepts involving wave motion leads to a study of sou
generation, transmission and detection. The principles of wave motion also se
an introduction to a study of light, illumination and the principles involved in
instruments. Application is stressed throughout.
Prerequisites: T-MAT 101, T-PHY 102.

T-PHY 106 Applied Mechanics 5 0

Concepts and principles of statics and dynamics. Parallel concurrent and non
force systems in coplanar and noncoplanar situations. Concepts of centroids and
of gravity, moments of inertia, fundamentals of kinetics, and kinematics of veloc
motion.
Prerequisites: T-MAT 102, T-PHY 102.

T-PHY 231 Fluid Mechanics 3 0

Fundamental laws of fluid flow and application of these laws to the sizing of
cold water piping, steam piping, refrigerant piping, air ducts, pumps, and fans. Pa
emphasis will be directed to calculations of capacity, horsepower, and head
ments of pumps and fans; to comparison of the several methods of piping and
sizing; and to methods of fluid flow measurement.
Prerequisites: T-MAT 103, T-PHY 102.

PHY 1101 Applied Science 3 2

An introduction to physical principles and their application in industry.

Topics in this course include measurement; properties of solids, liquids, an
basic electrical principles.
Prerequisite: None.

PHY 1102 Applied Science 3 2

The second in a series of two courses of applied physical principles. Topics in
in this course are heat and thermometry, and principles of force, motion, work,
and power.
Prerequisite: PHY 1101.

POLITICAL SCIENCE (POL)

T-POL 201 United States Government 3 0

A study of government with emphasis on basic concepts, structure, powers, pr
and problems.
Prerequisite: None.

POWER MECHANICS (PME)

PME 1101 Internal Combustion Engine 3 12

Development of a thorough knowledge and ability in using, maintaining, an
the various hand tools and measuring devices needed in engine repair work.

construction and operation of components of internal combustion engines. Testing of gine performance; servicing and maintenance of pistons, valves, cams and camshafts, l and exhaust systems, cooling systems; proper lubrication; and methods of testing, gnosing and repairing.
erequisite: None.

IE 1102 Engine Electrical and Fuel Systems 5 12 9

thorough study of the electrical and fuel systems of the automobile. Battery nking mechanism, generator, ignition, accessories and wiring; fuel pumps, carburetors, l fuel injectors. Characteristics of fuels, types of fuel systems, special tools, and ting equipment for the fuel and electrical system.
erequisite: PME 1101.

PRACTICAL NURSING (PNE)

E 1001 Fundamentals of Health 2 0 0 2

his course is a study of total health and health habits and their effect on the ividual, the family, and the environment in which they live. The study of health urces available to all persons and selected agencies that may be visited for special ning.
requisite: None.

E 1002 Basic Sciences 6 4 0 8

his course is designed to give the student an understanding and appreciation of c science principles and their relationship to practical nursing. The course includes ly of the structure and functions of the nine systems of the body, the basic principles nutrition which involves mechanics of digestion, absorption and metabolism, itional requirements for all age groups both sick and well, and selected learning of robiology as related to the prevention of diseases, promotion of health, and the e's responsibilities in protecting the patients and others from illness and/or ctions.
equisite: None.

1003 Fundamentals of Practical Nursing 4 8 0 8

esigned to assist the beginning Practical Nurse student in acquiring knowledge to the development of skills needed for safe and effective bedside nursing

equisite: None.

1004 Clinical Experience I 0 0 21 7

ginning experiences in a general hospital under supervision of clinical teachers, opportunity to practice skills learned in the laboratory, and understanding of the nts' role on the nursing team.
quisites: PSY 1101, PNE 1001, 1002, 1003.

1005 Medical-Surgical Nursing I 2 2 0 3

signed to give the student material basic to the beginning understanding of the ng care of patients with common problems presented by illness. Processes of

illness, diagnostic tests, physiologic reaction to pain, needs of patients with long illnesses, rehabilitation, pre and post operative needs, anesthetic agents, and mod tion of diet for disease condition.
Prerequisite: PNE 1001, 1002, 1003; PSY 1101.

PNE 1006 Maternity Nursing 2 2 0

Presentation of modern aspects of maternity nursing with emphasis on n obstetrics. Detailed presentation of material on nursing care during antepartum, and postpartum periods. Care of the newborn baby and methods of teaching mothers. Emphasis is to provide better and safer care for the expectant mother an baby.
Prerequisites: PNE 1001, 1002, 1003; PSY 1101.

PNE 1007 Nursing of Children 2 2 0

Understanding of the scope and aims of modern nursing of children. Physical ences in the child from the adult. Methods of answering the needs of the hospit child and his parents. Common disorders of children and their implications for n care. Nursing care of the seriously ill child with emphasis on her role on the team.
Prerequisites: PSY 1101, PNE 1001, 1002, 1003.

PNE 1008 Clinical Experience II 0 0 21

Further experience in basic areas of medical, surgical, pediatric, or obstetric n Emphasis on observation of signs and symptoms and assuming responsibility in re to head nurse.
Prerequisite: PNE 1004.

PNE 1009 Medical-Surgical Nursing II 4 2 0

Designed to develop knowledge of common disorders of body systems, the n care, socio-psychological implications.
Prerequisite: PNE 1005.

PNE 1011 Clinical Experience III 0 0 21

Further experience in the practice of nursing skills. Continued experiences basic areas of medical-surgical nursing. Experience in giving oral and topical medi under the direction of clinical teacher. Emphasis on observation of signs and sy and taking part in making nursing judgments in team conference. Isolation tec and practice, oxygen therapy. Continued experience in medical-surgical, pediat maternity nursing with emphasis on the role as an assistant to the professional caring for the seriously ill patient. All experience in the clinical area is un supervision of the clinical teacher.
Prerequisite: PNE 1008.

PNE 1012 Advanced Medical-Surgical Nursing III 4 0 0

Continue the study of the nursing needs of the more seriously ill or aging with disorders affecting the body systems.
Prerequisite: PNE 1009.

E 1013 Mental Health 3 0 0 3

n introduction of mental, emotional and physical reactions caused by illness and
italization. The study of the more frequent symptoms of mental illnesses, and
Practical Nurse student's role in the care of mentally or emotionally disturbed
ent. Common terminology associated with the field of mental health.
equisite: PSY 1101.

E 1014 Vocational Adjustment 2 2 0 3

esigned to present further nursing ethics, medical-legal aspects of Practical Nursing
a study of the organizations for the graduate Practical Nurse, and the study of
ortunities in Practical Nursing and the obligations and responsibilities of the Licensed
tical Nurse as a person, a worker, and a citizen.
equisite: PNE 1012.

PSYCHOLOGY (PSY)

SY 112 Personality Development 3 0 3

esigned to help the student recognize the importance of the physical, intellectual,
l, and emotional dimensions of personality. Emphasis is placed on grooming and
ods of personality improvement.

SY 206 Applied Psychology 3 0 3

survey of psychological thinking on the topics of heredity, environment, maturation,
ing, motivation, emotion, perception, and personality (normal and abnormal).
hasis is placed on the application of knowledge to work and life situations.
equisite: None.

SY 221 Psychology of Color 3 0 3

study of color, the conscious and subconscious response to combinations of colors
plied to visual communications.
equisite: None.

1101 Human Relations 3 0 3

study of basic principles of human behavior. The problems of the individual are
ied in relation to society, group membership, and relationships with the work
tion.
equisite: None.

1112 Personality Development 3 0 3

esigned to help the student recognize the importance of the physical, intellectual,
l, and emotional dimensions of personality. Emphasis is placed on grooming and
ods of personality improvement.

SOCIAL SCIENCES

C 201 Social Science 3 0 3

investigation into the basic concepts of sociology. Topics considered are sociologi-
ethods, the nature and meaning of culture, personality and socialization, role and
s, social control, groups and associations, institutions, and the family. Course

emphasis is on application of the principles of sociology to the understanding and work situations.
Prerequisite: None.

T-SSC 202 Social Science 3 0

An extension of the student's knowledge into the area of sociology, the includes considerations of social class, social mobility, social processes, social race relations, collective behavior, population, community problems, social c and social movements. The course emphasizes a nonscientific but in-depth a of some of the more complex topics in sociology.
Prerequisite: T-SSC 201.

T-SSC 205 American Institutions 3 0

A study of the effect of American social, economic, and political institutions u individual as a citizen and as a worker. The course dwells upon current national, and global problems viewed in the light of our political and economic h
Prerequisite: None.

SOCIOLOGY (SOC)

T-SOC 207 Rural Society 3 0

A study of selected elements of rural sociology with emphasis on curren changes. The course provides a sociological background for the understanding social changes. Areas of study include rural culture, group relationships, social rural and suburban communities, farm organizations, the communication of agri technology, rural social problems, agricultural adjustment and population chan
Prerequisite: None.

WELDING (WLD)

WLD 1101 Basic Gas & & Electric Welding 0 3

Welding demonstrations by the instructor and practice by students in the shop. Safe and correct methods of assembling and operating the welding eq Practice will be given for surface welding; brazing, silver-soldering, and flame methods applicable to mechanical repair work using gas welding. Practice electric welding will be given as it applied to simple construction and me repair.
Prerequisite: None.

°Seminar

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Please attach
recent photo

REQUEST FOR ADMISSION

TECHNICAL INSTITUTE OF ALAMANCE

411 Camp Road, Burlington, North Carolina 27215

Phone 227-7471

Telephone ____________

1. Name (Mr., Miss, Mrs.) ____________ Last ____________ First ____________ Middle

____________ If you are married, give maiden name. ____________ If you are under 21, give name of parent.

2. Home Address ____________ Name and Street ____________ City ____________ State ____________ Zip

3. Marital Status ____________ Married, Single, Divorced, etc. If married, give spouse's name and address.

4. Birth ____________ Month ____________ Day ____________ Year Age ______ Birthplace ______ City or County State ______

5. Social Security No. ____________ Sex ______ Race ______

6. High School Last Attended ____________ Name of School ____________ Address of School ____________ County

Did you (or will you) graduate?
(a) yes ______ Date of Graduation ____________
(b) no ______ Grade Completed ____________
(c) Equivalency Certificate ____________

7. Schools or colleges attended after high school graduation, if any ____________

____________ Name of School ____________ Dates of Attendance

____________ Name of School ____________ Dates of Attendance

8. Have you ever been dismissed from a college? No ______ Yes ______ If yes, which college ______
when ____________

9. I plan to enroll full time (12 or more quarter hours) ______. Less than full-time ______.

10. I plan to attend Day Classes ______ Evening Classes ______.

11. This application is for admission to what quarter? Fall 19______, Winter 19______
Spring 19______, Summer 19______.

12. I need information on area housing______.

I understand that I am responsible for having official transcripts of my high school and previous college records, if any, sent directly to the Admission Officer, Technical Institute of Alamance, 411 Camp Road, Burlington, North Carolina 27215. I certify that I have listed above all schools or colleges attended after high school, if any. NOTE: Special physical examination forms are required of Practical Nursing and Dental Assistant applicants. These forms will not be sent to the student until 30 days prior to enrollment.

Date of application ____________ Applicant's Signature ____________

(over)

Rate as excellent, good, fair, or poor: Your general health ________ eyesight ________ hearing ________

speech ________ What is your height? ________ weight? ________.

Do you have any physical handicaps that interfere with your studies or work that you might assume: If so, please

explain ____

Are you at present receiving medical care of any sort? ________ If so, please describe and give dates. ________

FIELDS OF STUDY

Please place a check mark before the field of study you wish to pursue. Check only one.

TECHNICAL PROGRAMS

Leading to associate of applied science degree and preparation for employment.

BUSINESS EDUCATION TECHNOLOGIES

____Business Administration

____Business Data Processing

____Scientific Data Processing

____Medical Secretary

____Engineering and Technical Secretary

____General Office Technology

ENGINEERING TECHNOLOGIES

____Air Conditioning, Heating, Refrigeration

____Chemical Technology

____Drafting and Design Technology

____Electronics Technology

APPLIED ARTS

____Commercial Art and Advertising Design Technical Illustration

VOCATIONAL PROGRAMS

Leading to a diploma and preparation for employment.

HEALTH OCCUPATIONS

____Dental Assisting

____Practical Nursing

MECHANICAL OCCUPATIONS

____Air Conditioning and Refrigeration

____Automotive Mechanics

____Machinist Trade

____Mechanical Drafting

EXTENSION CERTIFICATE PROGRAMS

Job related for employed person. (Title see below)

____Air Conditioning, Heating and Refrigeration

____Automotive Mechanics

____Drafting — Mechanical

____Radio and TV

____Machine Shop

____(Other) ________

I am interested in ________________________

________________ Undecided. I would like to have assistance through vocational counseling.

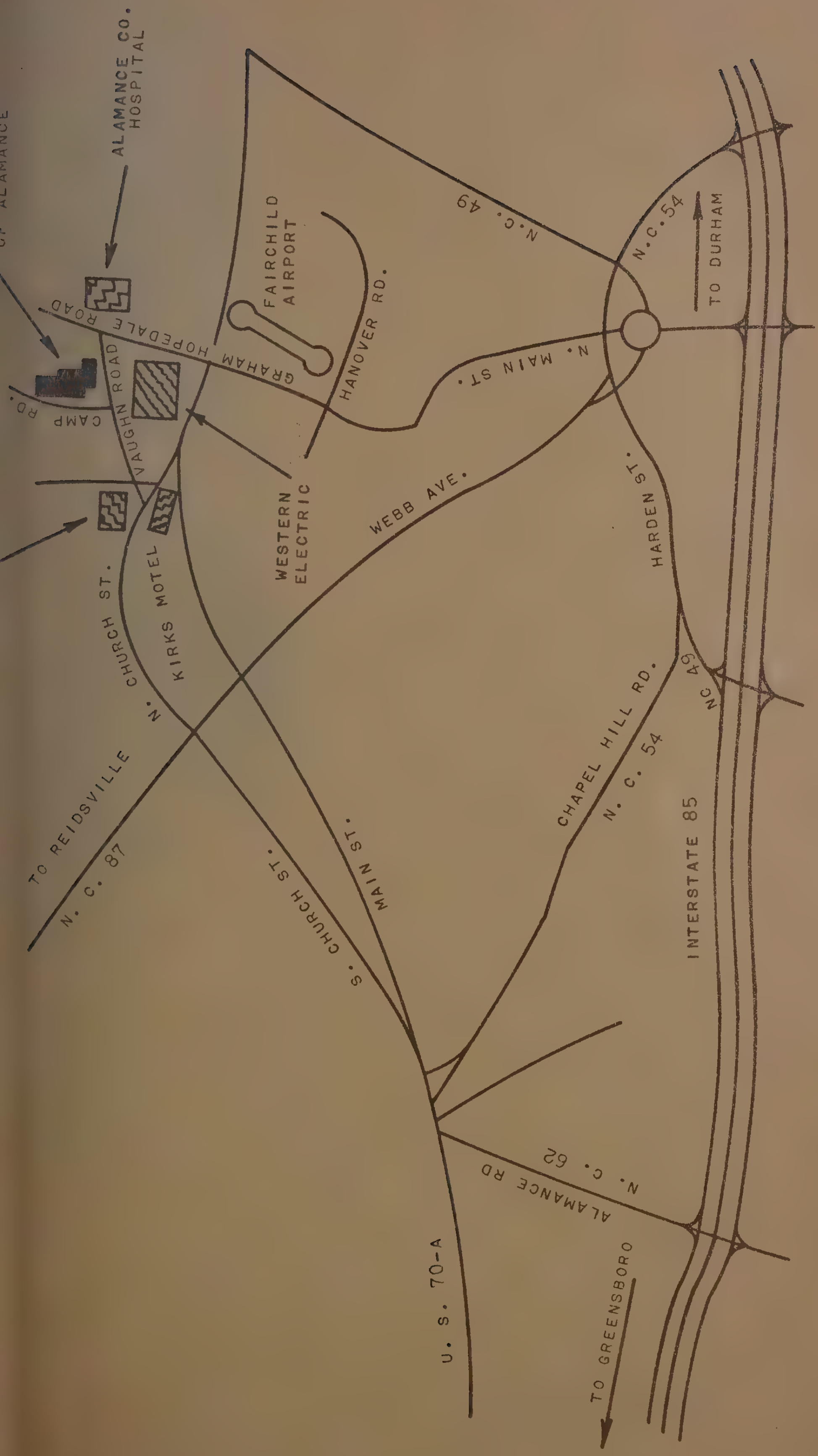
Character References (list three)

On the references below, please list three people who can attest to your character and potential.

Name ________________ Address ________________

Name ________________ Address ________________

Name ________________ Address ________________


OF ALAMANCE
ALAMANCE CO. HOSPITAL
CAMP RD.
VAUGHN ROAD
GRAHAM HOPEDALE ROAD
FAIRCHILD AIRPORT
HANOVER RD.
N.C. 49
N.C. 54
TO DURHAM
N. MAIN ST.
WESTERN ELECTRIC
WEBB AVE.
HARDEN ST.
N. CHURCH ST.
KIRKS MOTEL
TO REIDSVILLE
N. C. 87
S. CHURCH ST.
MAIN ST.
CHAPEL HILL RD.
N. C. 54
NC 49
INTERSTATE 85
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ALAMANCE RD
U. S. 70-A
TO GREENSBORO

411 Camp Road
Burlington, North Carolina 27215

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LIBRARY RATE

MR. GEORGE STEVENSON
NORTH CAROLINA COLLECTION
UNIVERSITY OF NORTH CAROLINA
CHAPEL HILL, NORTH CAROLINA

5

GENERAL CATALOG

1972 - 1974

hnical Institute of Alamance Burlington, North Carolina

Mailing Address	Technical Institute of Alamance 411 Camp Road Burlington, North Carolina 27215
Telephone Number	227-7471 Area Code 919

For prompt handling, inquiries should be addressed to the offices indicated below:

General Information	President
Business Affairs	Business Manager
Admissions Student Information Financial Aid Counseling Services	Director of Student Personnel
Vocational-Technical Programs	Director of Occupational Education
General Adult Education	Director of General Adult Education

Visitors are always welcome at the Technical Institute of Alamance. The Administrative Offices are open Monday through Thursday from 8:00 a.m. to 10:00 p.m. and Friday from 8:00 a.m. to 5:00 p.m. Visitors desiring interviews with members of the staff are urged to make appointments in advance.

GENERAL CATALOG

1972 - 1974

nical Institute of Alamance Burlington, North Carolina

ACADEMIC CALENDAR

FALL QUARTER 1972 THRU SUMMER QUARTER 1973

FALL QUARTER 1972

Sept.	5	New Student Orientation
Sept.	6	Registration
Sept.	7	Classes Begin
Sept.	13	Last Day to Add a Course
Nov.	22	Classes End
Nov.	23/24	Thanksgiving Holidays

WINTER QUARTER 1972

Nov.	29	Registration
Nov.	30	Classes Begin
Dec.	6	Last Day to Add a Course
Dec.	21/29	Christmas Holidays
Jan.	1	New Year's Holiday
Feb.	28	Classes End

SPRING QUARTER 1973

Mar.	5	Registration
Mar.	6	Classes Begin
Mar.	12	Last Day to Add a Course
Apr.	20/23	Easter Holidays
May	23	Classes End

SUMMER QUARTER 1973

May	28	Registration
May	29	Classes Begin
June	4	Last Day to Add a Course
July	4	Independence Day Holiday
July	23/27	Summer Vacation
Aug.	22	Classes End

Note: Prescheduling for the next quarter will be conducted during the ninth week of each quarter.

ACADEMIC CALENDAR

FALL QUARTER 1973 THRU SUMMER QUARTER 1974

FALL QUARTER 1973

Sept.	4	New Student Orientation
Sept.	5	Registration
Sept.	6	Classes Begin
Sept.	12	Last Day to Add a Course
Nov.	21	Classes End
Nov.	22, 23	Thanksgiving Holidays

WINTER QUARTER 1973

Nov.	28	Registration
Nov.	29	Classes Begin
Dec.	5	Last Day to Add a Course
Dec.	21-31 (Inc.)	Christmas Holidays
Jan.	1	New Year's Holiday
Feb.	28	Classes End

SPRING QUARTER 1974

Mar.	5	Registration
Mar.	6	Classes Begin
Mar.	12	Last Day to Add a Course
Apr.	12, 15	Easter Holidays
May	23	Classes End

SUMMER QUARTER 1974

May	28	Registration
May	29	Classes Begin
June	4	Last Day to Add a Course
July	4, 5	Independence Day Holiday
July	22-26	Summer Vacation
Aug.	22	Classes End

Note: Prescheduling for the next quarter will be conducted during the ninth week of each quarter.

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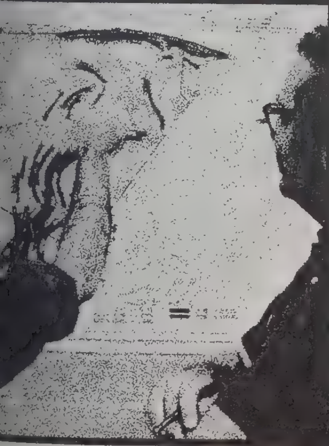
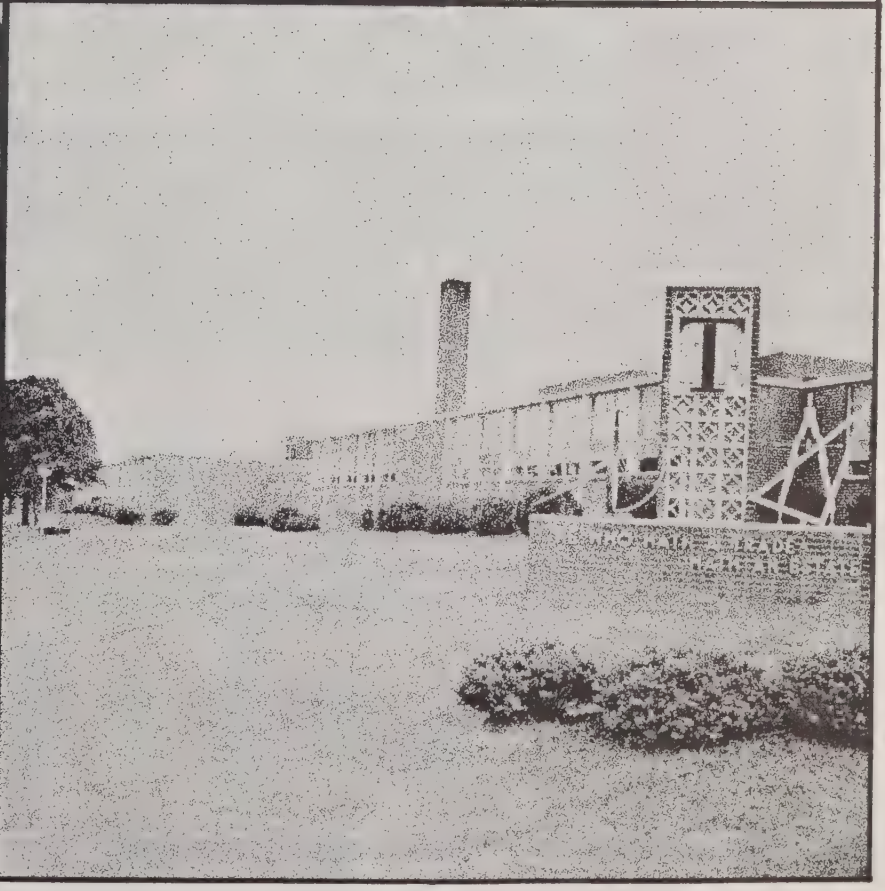
The Legal and Corporate Name of the Institution is:

"TECHNICAL INSTITUTE OF ALAMANCE"

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the Technical Institute of Alamance. The Institute reserves the right to make changes in the regulations, courses, fees, and other matters of policy and procedure as and when deemed necessary. The Institute further reserves the right, at any time, to request the student to withdraw when it considers such action to be in the best interest of the institution.

THE INSTITUTE





The Technical Institute of Alamance was established in 1959. Its establishment was part of a state-wide system known as Industrial Education Centers. Through the cooperative efforts of the State Department of Trade and Industrial Education and the schoool systems of Alamance County and Burlington, the Burlington-Alamance County Industrial Education Center was begun.

The need for and the development of the Institute has been centered on the principle of responsiveness to changing needs and conditions in the area. The expansion of the industrial and technological era in the State has created many new employment opportunities for technically trained personnel. In addition, the right of every individual to have an educational opportunity to develop according to one's potential has been recognized.

The initiation of a state-wide system of Industrial Education Centers was begun in 1957 by the allocation of funds by the General Assembly. In 1959, the General Assembly officially designated this type of vocational school as an Industrial Education Center.

Under legislation enacted in 1963, administration of the Industrial Education Center was transferred to the State Board of Education, Department of Community Colleges. The local control of the Institution was vested in a board of trustees by the new legislation.

In continuance of the principle of responsiveness to changing needs and conditions in the area, the Board of Trustees applied to the State Board of Education through the State Department of Community Colleges to become a Technical Institute. The State Board of Education approved the change in status to a Technical Institute in January, 1964. Along with the approval, authority was granted to award the degree, Associate in Applied Science Degree (A.A.S.), in approved programs. In the spring of 1964, the Board of Trustees changed the name of the Institute to Technical Institute of Alamance.

In November of 1966 the Board of Trustees of the Technical Institute of Alamance authorized an institutional self-study to assist in measuring the effectiveness of the educational program of the school. The Technical Institute of Alamance was accredited by the Southern Association of Colleges and Schools in December, 1969, as a result of this self-study and review by a visiting committee from the Association.

In September of 1971. Governor Robert Scott and Mrs. Elizabeth Carrington announced the donation of 48 acres of land to be used for the site of a new and expanded facility for the Institute. With the support of the community, the new campus should soon be a reality.

Future development of the Technical Institute of Alamance will, as in the past, be constantly responsive to the educational and occupational as well as culturally oriented needs of the community.

PURPOSE

The purpose of the Technical Institute of Alamance shall be to:

Be responsive to the varied educational needs of the community and students by offering a variety of curricula;

Provide opportunities for those desiring training through the technical level in business, science, applied arts, and engineering;

Provide opportunities for those desiring occupationally-oriented training in skilled trades and health related fields;

Provide courses for persons of suitable age who failed to complete high school, and to offer general adult education courses for social, cultural, and personal development;

Provide educational services — speakers, resource personnel, and special programs — to individuals and groups as requested;

Provide opportunities for the educational, cultural, and social aspects of the individual's total development through well-rounded curricula, adequate facilities and equipment, qualified faculty, and student activities.

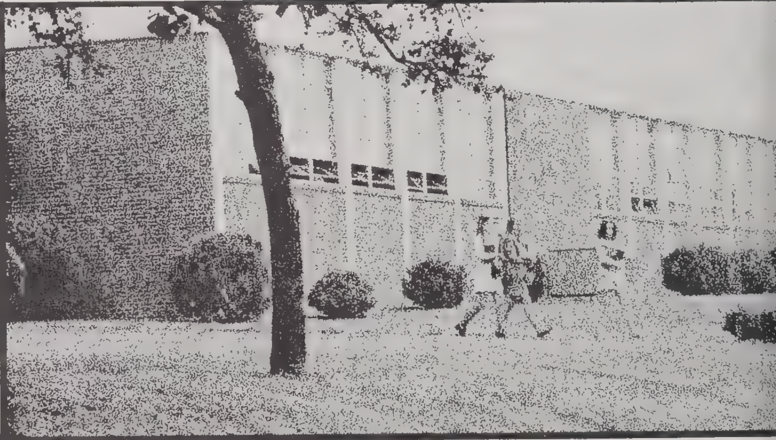
ACCREDITATION

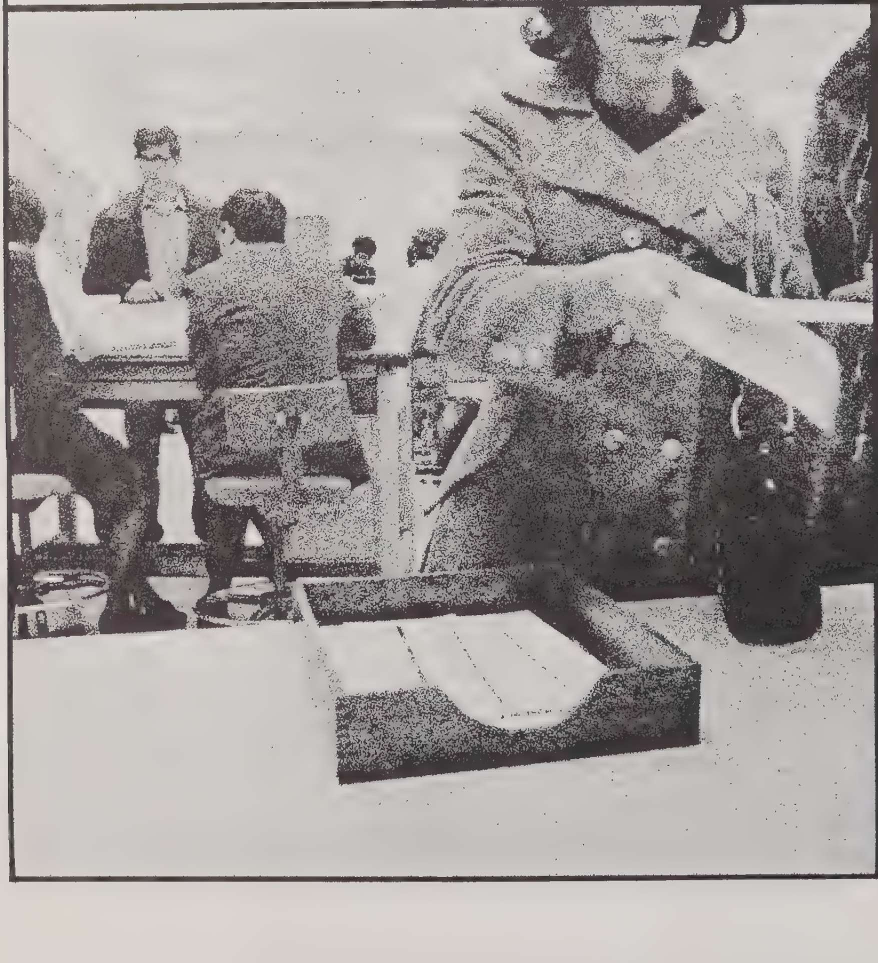
The Institute is accredited by the Southern Association of Colleges and Schools.

The Dental Assisting Program is accredited by the Council on Dental Education of the American Dental Association.

The Drafting and Design Technology and the Electronics Engineering Technology Programs are accredited by the Engineers' Council for Professional Development.

ADMISSIONS





ADMISSIONS

Through following an "open door" policy of admissions at the Technical Institute of Alamance, it is possible for a high school graduate or a school leaver 18 years old or older needing a formal educational opportunity to be served by the institution.

The "open door" policy does not eliminate the restrictions on admission to specific programs. It does mean that these restrictions will be flexible enough under careful guidance to allow a student every reasonable opportunity to prove himself under good teaching. A student will be afforded the opportunity to eliminate admission requirement deficiencies through remedial work, and may remain in the program of remedial work as long as he makes satisfactory progress. As soon as a student can meet the specific admission requirements, he may be enrolled in a curriculum. Refer to specific department for admission requirements for each program.

GENERAL PROCEDURES

1. The applicant must be eighteen years of age or older (or a high school graduate) to be admitted to curriculum programs at the Institute.
2. Applicant must submit an application form.
3. Applicant must have high school (and college) transcript or previous academic work or high school equivalency (GED) scores submitted to the Institute.
4. Applicant should report to the Institute for admission counseling and appropriate placement testing. There is no fee for this service. (Appointment schedules for testing will be mailed as applications are processed).
5. Applicant must be in acceptable physical and mental health. Handicapped persons will be considered on a individual basis.

In addition to the basic standards for admission, specific requirements may apply to certain programs. These requirements may be found in the appropriate program section of the catalog.

To facilitate acceptance, applicants should if at all possible submit applications thirty days prior to registration. It is especially important to apply early when applying for programs in which enrollment may be limited.

VETERANS

The Technical Institute of Alamance is approved by the Veterans Administration for students who are eligible under the law. Veterans and dependents or students who expect to enroll under the War Orphans Educational Assistance Act should:

(1) Notify the Institute of intent to enroll under the Veterans Administration.

(2) Make application and be accepted by the Institute.

(3) Notify the Veterans Administration of intended enrollment, specifying the curriculum to which you have been accepted.

SPECIAL STUDENTS

Special students are those who are enrolled for course credit but not in a curriculum leading to the diploma or the associate degree. Students enrolled in this status will normally be required to meet the prerequisites for the course or to demonstrate a necessary level of competence by an appropriate test. Students enrolled on this basis must do so through arrangement with the Student Personnel Office.

PROVISIONAL STATUS STUDENTS

Students who have not completed placement tests or lack sufficient data for their file may be classified as provisional students. Those students on this status must complete all admission requirements following actual enrollment.

REGISTRATION PERIODS

The Institute operates on a quarter system. Registration of new students for all curriculum programs occurs at the beginning of the fall quarter in September and any other quarter when there are sufficient students to begin a program.

Continuing students may consult the Institute calendar for specific dates of subsequent registration periods.

CLASS HOURS

Courses are scheduled between the hours of 8:00 A.M. and 10:00 P.M., Monday through Thursday and between 8:00 A.M. to 5:00 P.M. on Fridays.

SCHEDULE OF CURRICULUM CLASSES

Shortly before registration each quarter, the Institute will announce a master schedule of courses to be offered. This will generally include those courses required for a student to complete the work as outlined in the catalog for his curriculum. In some instances, however, it will be necessary for the Institute to rearrange this sequence of course offerings. Every effort will be made to enable a student to complete his program in the minimum possible time. Whenever practical, make-up classes and special courses will be offered to those needing them.

PRE-SCHEDULING

Using this master schedule of courses, each student should consult with his advisor prior to registration to arrange a class schedule to meet his own particular requirements. A pre-scheduling period will be announced each quarter.

COURSE LOAD

Students enrolled for 12 or more credit hours are classified as full-time students. Students enrolled in less than 12 credit hours are classified as part-time. The recommended course load varies from one curriculum to another as outlined within this catalog. The length of time indicated to complete any program is based on the recommended course load. Any deviation from the proposed schedule will extend the time required to graduate.

Each student should carefully plan his course load with his Faculty Advisor. It is sometimes recommended that a student take less than the full course load in order to insure that he will have reasonable chance for success in his program.

Students, with the counsel of advisor, may take more than the usual course load.

Students receiving educational benefits from Social Security are required to carry 12 credit hours (must be full-time student). Those students receiving benefits from the Veterans Administration who wish to receive full benefits must be enrolled for a minimum of 12 credit hours if enrolled in a two year degree program; or 30 contact hours in a one-year diploma program. Benefits are available from the Veterans Administration for part-time attendance as well.

TRANSFER CREDIT

The Technical Institute of Alamance permits admission with transfer credit for students from member institutions of the North Carolina Department of Community Colleges, and other recognized and approved institutions. Content of such courses must closely parallel these for which credit is sought at the Institute.

The Registrar and Department Head must approve all transfer credits and each application for transfer of credit will be evaluated according to the individual situation. Transfer courses will transfer for credit only.

Candidates for a diploma or degree are normally expected to complete one-half of their course work at this institution. Special cases will be given consideration.

TRANSFER CREDIT TO OTHER SCHOOLS OR COLLEGES

There are an increasing number of schools and colleges who are accepting course work, completed in a technical program at TIA for credit toward the Bachelor's Degree. Most of these colleges consider each applicant and his record individually and the courses for which credit is sought must be similar to the course (s) offered by that institution. Some colleges give credit on the basis of examinations. A few colleges give full-credit for the Associate in Applied Science Degree either toward a Bachelor of Arts, Bachelor of Science or Bachelor of Technology.

For those few students who do desire to continue their education after graduation from TIA, there are indeed expanding opportunities to do so. If you are one of these, you should see a counselor at TIA for further details or write the college being considered.

WAIVING OF COURSE REQUIREMENTS BY PROFICIENCY EXAMINATION

Under special requirements set up by each Department Head of a curriculum department, a student may be allowed credit toward graduation for past schooling or work experience. The student should confer with his major Department Head in regard to procedure to be followed.

A grade symbol of CE (Credit by Examination) will be awarded for courses for which credit is given on the basis of proficiency examination previous education, or work experience. The course hours for such courses posted as "CE" will be computed toward graduation requirements; however no quality points will be credited, and the hours will not be computed in the quality point average.

AUDIT STUDENTS

A student may elect to audit a course or courses. Those auditing receive no credit and do not have to take any examination; otherwise, participation in class is on the same basis as a credit student. The fee for auditing is the same as the fee for credit.

EXPENSES

RESIDENCE STATUS FOR TUITION PAYMENT

1. *General:* The tuition charge for legal residents of North Carolina is less than for nonresidents. To qualify for in-state tuition, a legal resident must have maintained his domicile in North Carolina for at least the twelve months next preceding the date of first enrollment or re-enrollment in an institution of higher education in this state. Student status in an institution of higher education in this state shall not constitute eligibility for residence to qualify said student for in-state tuition.

2. *Minors:* A minor is any person who has not reached the age of eighteen years. The legal residence of a person under eighteen years of age at the time of his first enrollment in an institution of higher education in this state is that of his parents, surviving parent, or legal guardian. In cases where parents are divorced or legally separated, the legal residence of the father will control unless custody of the minor has been awarded by court to the mother or to a legal guardian other than a parent. No claim of residence in North Carolina based upon residence of a guardian in North Carolina will be considered if either parent is living unless the action of the court appointing the guardian antedates the student's first enrollment in a North Carolina institution of higher education by at least twelve months.

3. *Adults:* An adult is any person who has reached the age of eighteen years. Persons, eighteen or more years of age at the time of first enrollment in an institution of higher education, are responsible for establishing their own domicile. Persons reaching the age of eighteen, whose parents are and have been domiciled in North Carolina for at least the preceding twelve months, retain North Carolina residence for tuition payment purposes until domicile in North Carolina is abandoned. If North Carolina residence is abandoned by an adult, maintenance of North Carolina domicile for twelve months as a non-student is required to regain in-state status for tuition payment purposes.

4. *Married Students:* The legal residence of a wife follows that of her husband, except that a woman currently enrolled as an in-state student in an institution of higher education may continue as a resident even though she marries a nonresident. If the husband is a nonresident and separation or divorce occurs, the woman may qualify for in-state tuition after establishing her domicile in North Carolina for at least twelve months as a nonresident.

5. *Military Personnel:* No person shall lose his in-state resident status

by serving in the Armed Forces outside of the State of North Carolina. A member of the Armed Forces may obtain in-state residence status for himself, his spouse, or his children after maintaining his domicile in North Carolina for at least the twelve months next preceding his or their enrollment or re-enrollment in an institution of higher education in this state.

6. *Aliens:* Aliens lawfully admitted to the United States for permanent residence may establish North Carolina residence in the same manner as any other nonresident.

7. *Property and Taxes:* Ownership of property in or payment of taxes to the State of North Carolina apart from legal residence will not qualify one for the in-state tuition rate.

8. *Change of Status:* The residence status of any student is determined as of the time of his first enrollment in an institution of higher education in North Carolina except:

   (a) In the case of a nonresident student at the time of first enrollment who has subsequently maintained domicile as a nonstudent for at least twelve consecutive months and

   (b) In the case of a resident who abandons his legal residence in North Carolina.

   In either case, the appropriate tuition rate will become effective at the beginning of the first subsequent term enrolled.

9. *Responsibility of Students:* Any student or prospective student in doubt concerning his residence status must bear the responsibility for securing a ruling by stating his case in writing to the Registrar. The student who, due to subsequent events, becomes eligible for a change in classification, whether from out-of-state to in-state or the reverse, has the responsibility of immediately informing the Registrar of his circumstance in writing. Failure to give complete and correct information regarding residence constitutes grounds for disciplinary action.

FULL-TIME/PART-TIME STATUS

To have *full-time* status a student is required to be enrolled for 12 or more credit hours per quarter.

Part-time indicates that the student is enrolled for less than 12 credit hours per quarter.

TUITION: NORTH CAROLINA RESIDENT

Full-time students who are residents of North Carolina pay a maximum tuition of $32.00 per quarter.

Part-time students are charged a fee of $2.50 per credit hour.

OUT-OF-STATE (NON-RESIDENT)

Students who are not legal residents of North Carolina pay a higher tuition than do residents. Full-time, non-resident students are charged a tuition fee of $137.50 per quarter.

Part-time, non-resident students are charged $11.45 per credit hour.

ACTIVITY FEE

An activity fee of $2.00 per quarter is required of all full-time students, both resident and non-resident. Part-time students may elect to pay the fee; this will entitle them to participate in student activities sponsored by the Student Government Association.

The fee is due at the beginning of each quarter. These fees are disbursed at the discretion of the Student Government Association to finance the athletic program, student publications, social events, and other student body programs or activities. This fee is not refundable.

YEARBOOK FEES

Probably every student will want to have a copy of the student yearbook, the *Titan.* It may be purchased by subscription at $6.00 per copy. This fee is not refundable and purchase is optional.

LATE REGISTRATION FEE

To prevent or reduce the problems incidental to late registration, registration periods are scheduled for specific dates and definite procedures are established.

Any student who fails to complete registration for all classes and to make the required payment of expenses and fees on the prescribed registration day according to the official school calendar will be charged a late registration fee of $5.00. This applies to all curriculum students with no exception — day, evening, full-time, part-time, special, and audit enrollees.

Those with anticipated financial difficulties should contact the financial aid officer, in person, in advance of the registration date.

BOOKS AND SUPPLIES

All of the student's necessary textbooks can be acquired from the Institute's bookstore. Drawing supplies, slide rules, nursing caps, nurses and dental assistant pins, composition books, pens, pencils, decals and other miscellaneous items are also available in the bookstore. Class rings may also be ordered with the required deposits.

The bookstore is operated on a strictly cash basis and there is no refund on books or supplies. It would be to the student's advantage to meet each class at least once before attempting to purchase texts and materials.

Some textbooks cost as little as $1.25 and others as much as $15.00, but the average cost of each book is approximately $8.00. Most students should anticipate spending an average of approximately $40.00 per quarter for books, supplies, and materials. The total cost varies according to the particular program. The nursing, drafting and commercial art programs require special items and/or instructional kits which may vary from quarter to quarter. Students in Automotive Mechanics may be required to furnish a set of basic hand tools.

INSURANCE

Accident insurance, covering hours in school and transportation to and from school, is available for $3.00 per year. Students desiring this insurance may make payment during registration and at other designated times to the Business Office. It is not refundable.

Students enrolled in all shops and labs are particularly urged to take advantage of this insurance.

SUMMARY OF QUARTERLY EXPENSES FOR FULL TIME STUDENTS*

	N. C. Resident	Non-Resident	
Tuition	$32.00	$137.50	
Activity Fee	2.00	2.00	
Insurance (optional)	3.00	3.00	(paid once a year)
Books and Supplies (Estimate)	40.00	40.00	
Yearbook (optional)	6.00	6.00	(paid once a year)
	$83.00	$188.50	

Students in the curriculum or programs listed below will have additional expenses (approximately):

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* All fees subject to change.

Practical Nursing: $20.00 (Uniforms) $20.00 (State Nursing Board Exam)

Commercial Art: $50.00 (Drafting Kit and Supplies)

Drafting: $30.00 (Drafting Kit and Supplies)

Automotive Mechanics: $35.00 (Tool Kit)

Dental Assistance: $60.00 Uniforms and Shoes

The cost of board and room is not included in the above fees. Assistance in planning a total budget will be provided by the Financial Aid Officer upon request.

FINANCIAL AID AND ASSISTANCE

The purpose of student financial aid is to provide financial assistance to students who, without such aid, would be unable to attend TIA. Recognition is made that the principal responsibility of financing an education lies with the family and with the student himself. Financial aid consists of scholarships or grants, loans, and employment or a combination of these. All recipients must be full-time students. Applications for financial aid may be obtained from the Financial Aid Officer.

Other student aids, veterans benefits, and social security are coordinated by the Director of Student Personnel Services.

All requests for financial assistance should be made well in advance of registration.

TRANSCRIPT FEE

The first transcript is free. After the initial transcript is issued, a $1.00 fee will be charged for each subsequent transcript.

REFUND POLICIES

Cash Refund

Tuition refund for students shall not be made unless the student is, in the judgment of the institution, compelled to withdraw for unavoidable reasons. In such cases, two-thirds (2/3) of the student's tuition may be refunded if the student withdraws within ten (10) calendar days after the first day of classes as published in the school calendar. Tuition refunds will not be considered after that time. Tuition refunds will not be considered for tuitions of Five Dollars ($5.00) or less except if a course or curriculum fails to materialize, and in such case all the tuition will be refunded. Exception: Those students who are veterans or war orphans receiving benefits under U. S. Code, Title 38, Chapter 33 and 35 may be refunded the pro rata portion of the tuition fee not used at the time of withdrawal of such students.

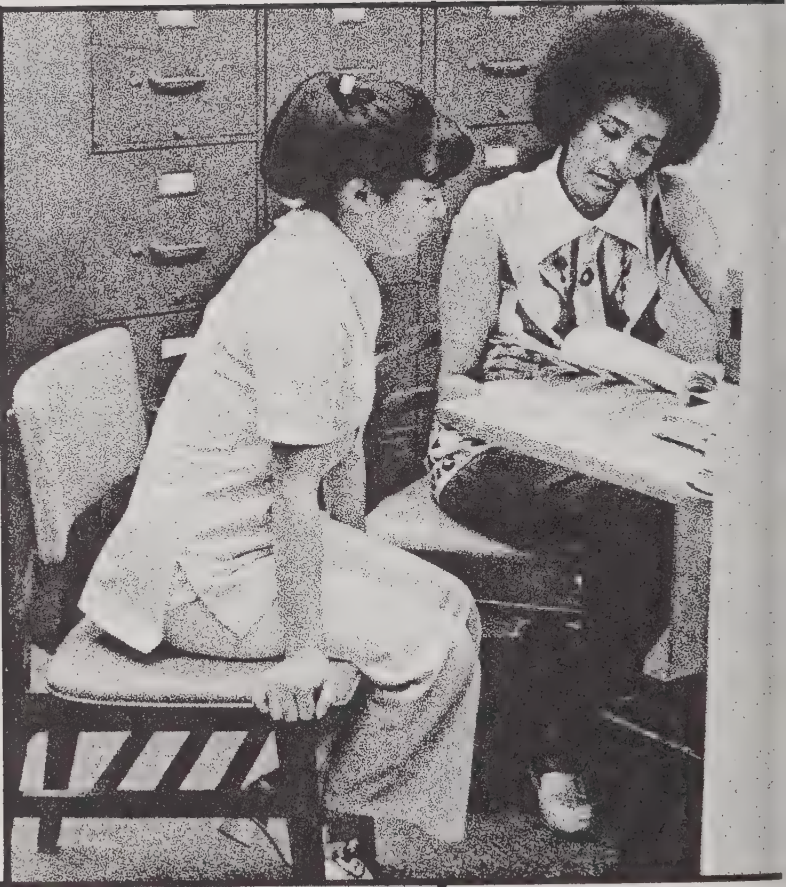
CREDIT FOR UNREFUNDED TUITION AND FEES

When a student, having paid the required tuition and fees for a quarter, withdraws from the institution before the end of the quarter and the reasons for the withdrawal are found excusable, the student may be allowed credit for unrefunded tuition and fees if he applies for re-admission during any of the next four calendar quarters and petitions in writing to be allowed such credit.

When a student, having paid the required tuition and fees for a quarter, dies during the quarter, (prior to or on the last day of examinations) all tuition and fees for that quarter may be refunded to the estate of the deceased.

There is no refund on payments for activity fees, insurance premium fees, yearbook, and special fees such as late registration.

SERVICES



COUNSELING

Counseling in relation to program choice, entrance placement, educational objectives and vocational goals is available to all students at the Technical Institute of Alamance. Prospective students are encouraged to utilize these services as they are making plans for further education.

Information concerning entrance and graduation requirements, financial aid, employment trends, job opportunities, student activities, and student policies are all services offered by the counseling staff. Testing for aptitude and interest is available when appropriate.

Counseling for personal growth and adjustment on the basis of individual need is one of the primary services offered by the staff. Assistance in referral to other agencies is available.

Counselors are available at the Student Personnel Office.

ADVISOR

Upon enrollment, each student is assigned a faculty advisor who will provide academic guidance throughout his program. The advisor will assist in planning the course load and schedule each quarter until graduation. The advisor must approve all schedules and schedule changes.

ORIENTATION

The purpose of the orientation program is to introduce the student to the administrative personnel, faculty, and student leaders. Tours and discussions familiarize the student with the overall educational opportunity at TIA. The rules, policies, and privileges as well as the use of facilities, resources, and programs are discussed. All new students and transfer students are expected to attend.

STUDENT HOUSING

The Institute does not have dormitory facilities and does not assume responsibility for housing. However, Burlington residents do voluntarily offer housing facilities. Costs will vary between $12 and $18 per week according to livability and convenience. Students are urged to make early plans for housing and investigate before enrollment date.

PLACEMENT SERVICE

The Placement Service is designed to guide and assist the student in obtaining the type of position for which he is best qualified.

Prospective employers contact the Institute in their recruitment of qualified employees. Information on these job opportunities is shared with the students seeking employment. Information concerning employment trends and salary data is also available.

The Institute does not guarantee employment; the primary responsibility for securing employment lies with the student. Those needing assistance in job placement should contact the Student Personnel Office.

GENERAL EDUCATIONAL DEVELOPMENT TEST

The GEDT is the high school equivalency examination recognized by the North Carolina State Board of Education. Successful completion of the GEDT indicates that the individual has demonstrated that he has the general educational competence comparable to that of a high school graduate. Persons taking the test must be at least 19 years of age. A person who is 18 years of age is also eligible if he has been out of the regular high school program for at least six months.

The test is given on campus several times a year. There is a fee of $3 due at the time the test is taken. Anyone interested in preparing to take the test should contact a counselor at the Institute.

STUDENT LOUNGE

The Student Lounge is conveniently located in the building and is open to all students as a place for relaxation and refreshments. A variety of soft drinks, along with coffee, candy, and sandwiches are available at the snack bar. Smoking is permitted only in the lounge.

LEARNING RESOURCES

Learning to appreciate and use the library is an important part of every individual's education. The Technical Institute of Alamance recognizes this as a significant factor in all of its programs. Every effort is made to supply the best possible resource material and a competent staff to meet these needs for the student, the faculty, and the community.

The collection of books and materials is open-shelf and open-stack. This easy access to books fosters an informal working atmosphere which encourages the student to read and study. Students find an environment where knowledge is not confined to disciplines or compartments but continues from one field to the next. In this situation, students usually learn more quickly when they can turn readily from the examination of one book to the examination of others related to their immediate interest. The book collection of about 6,000 volumes is growing at the rate of 2,000 yearly.

TIA subscribes to approximately 200 well-chosen periodicals which represent and support the curriculum. Those which are indexed in Reader's Guide, Applied Science and Technology, and Business Periodical Indexes are either bound or microfilmed each year for permanent use. These periodicals are useful in locating the most recent information on a particular subject.

The Learning Resource Center, through film rental agencies, supplies film for classroom use. Film use provides another dimension to the individual's learning. The student also has access to a select collection of audio-visual media and equipment which may be used at his convenience for enjoyment and study.

In order that the student make full use of the total resources of TIA, an orientation program on Library use is provided with the class instructor serving as the person best qualified to introduce the student to the literature of his particular field. Students are urged to ask for help when they feel the need of it.

LEARNING LABORATORY

The Learning Laboratory features programmed, self-instruction in areas of the language arts, social studies, mathematics, science, foreign language, art, and academic skills. Vocational courses are also available in electricity, electronics, and business education.

Programmed materials enable the student to *Progress at His Own Speed* and to *Study During Scheduled Time Periods Most Convenient to Him,* and to study without competition with fellow students. Learning Lab hours are 8:30 A.M. to 10:00 P.M. Monday through Thursday, and 8:30 A.M. to 4:00 P.M. Fridays. Lab courses frequently meet the need of students whose schedules make classroom attendance difficult.

Many adults study in the Learning Lab in preparation for the State High School Equivalency Examination, see page no. 24 which is administered at Technical Institute of Alamance. Some Lab courses are transferable into the Adult High School Diploma Program.

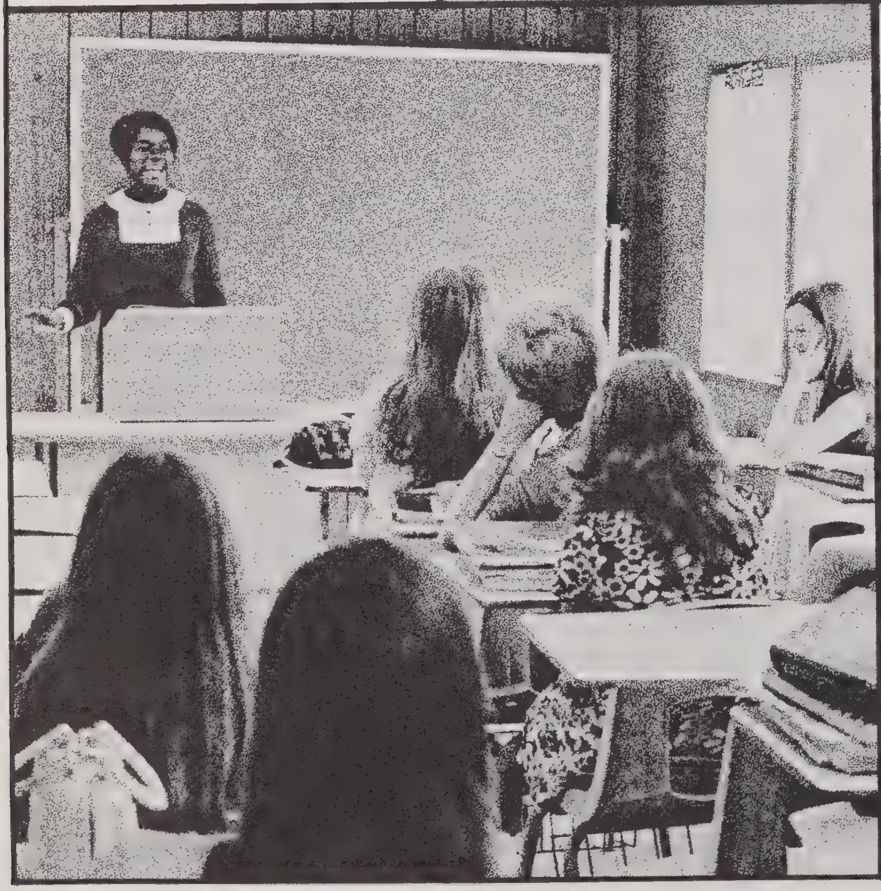
Anyone at least 18 years old can enroll any time during any quarter.

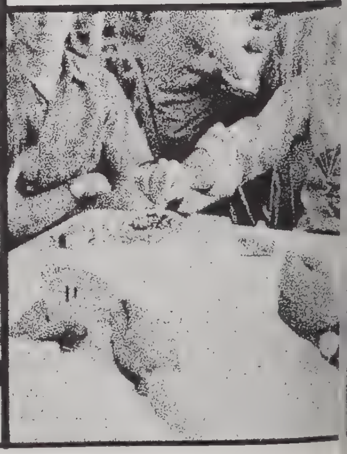
A coordinator is available to counsel and assist students. No grades are issued, but students are clearly aware of progress made.

All Learning Laboratory study is *Free of Charge.*

For further information about specific courses in the Lab, please refer to *The Learning Laboratory Catalog.*

ACADEMIC REGULATIONS





GRADING AND QUALITY POINT SYSTEM

The Technical Institute of Alamance operates on a quality point system. In the computation of a student's average, one quarter hour of work passed at TIA with a grade of A, B, C. D, or F is given a numerical value of 4, 3, 2, 1, 0 respectively, which is then multiplied by the number of quarter hours represented by the course. The resulting product is the number of quality points earned for the course with the grade received.

The quality point average is determined by dividing the total quality points earned in all courses by the total number of quarter credit hours scheduled including any courses failed.

GRADING AND QUALITY POINT SYSTEM

At the end of each quarter grades are given in each course by letters which are indicators of the quality of work done by the student.

A—Excellent	4 quality points for each credit hour
B—Good	3 quality points for each credit hour
C—Satisfactory	2 quality points for each credit hour
D—Passing	1 quality point for each credit hour
F—Failure	0 quality points. This signifies that the student has not met the minimum objectives of the course.
I—Incomplete	No credit. A grade of incomplete is assigned only when a specific requirement of a course has not been met. The instructor must specify in writing the conditions under which the "I" is to be removed. Incompletes not removed within one quarter will be recorded as "W" or "F" as determined by the instructor.
R—Re-enroll	No credit unitl the course objectives are completed.
W—Withdrawn	This signifies that the student has withdrawn during the first three weeks of the quarter, or later in the quarter with approval of the instructor.
AU—Audit	This signifies that the student has taken a course for no credit.
CE—Credit by Examination	This signifies that the student has met the objectives of the course and has demonstrated this by taking a proficiency examination. See "Waiving of Course Requirements," p. 14.
TR—Transfer	This signifies that credit for the course was accepted from another institution.

The QPA (quality point average) is a general measure of the quality of a student's work. The QPA is determined by dividing the total number of grade points earned by the total number of quarter hours attempted (excluding "I" and "R" grades).

ACADEMIC PROBATION

A student must achieve a cumulative quality point average of at least 2.0 in order to graduate. Failure to achieve a 2.0 cumulative quality point average at the end of any quarter will result in the student being placed on academic probation. The student will be notified of his probationary status and may be required to schedule periodic conferences with a counselor or advisor. Students whose quality point average for the quarter is less than 2.0 but whose cumulative QPA remains 2.0 or above will receive written notice of possible academic difficulty.

A student on probation may remain in his program as long as his subsequent quarter's QPA meets the minimum of 1.50. If the subsequent quarter's work should fail to meet this minimum, the student may be required by his Department Head to drop certain courses or change curriculum, and/or take developmental work. After all possible alternatives are exhausted and it becomes evident that the student is unable to maintain progress, the Department Head may recommend to the Student Affairs Committee that the student be dismissed from the school.

Re-admittance at a subsequent quarter will be at the discretion of the Student Affairs Committee and with the approval of the President. Students may appeal a decision of the Department Head by letter to the Student Affairs Committee. (See Appeals Procedure)

SPECIAL HELP

It is the student's responsibility to seek out extra help if necessary. Instructors may not require a person come in, but they are available for conferences and are always willing to help.

CLASS ATTENDANCE

POLICY

Regular class attendance is regarded as essential to the academic progress of the student. Registration in a course is regarded as a contract between the student and the institute.

If a student's class attendance threatens his progress in the course or impedes the progress of the class, he may be asked to withdraw from the class.

STUDENT'S RESPONSIBILITY

1. In no instance does absence from class relieve the student from the responsibility for the performance of any part of his course work.

2. The student is responsible for complying with any special attendance regulations specified by his instructor.
3. The student is responsible for initiating any request to make up work missed because of class absence. The decision to assist the student with "make up" work, including tests, in every case rests with the instructor.

INSTRUCTOR'S RESPONSIBILITY

1. An instructor may prescribe such reasonable regulations as he feels necessary. At the beginning of each quarter he shall inform the students in his classes of these regulations and file a copy with the dean of instruction.
2. Cases of unsatisfactory class attendance with a recommendation of appropriate action are to be reported to the dean of instruction.

APPEALS PROCEDURE

Cases involving unusual circumstances may be reviewed by the Hearings Committee. Written requests to the Hearings Committee must be initiated by the student no later than five calendar days following the event in question. Recommendations of the Hearing Committee are forwarded to the Administrative Committee for action.

INSTRUCTOR ABSENCES

In cases when the instructor is not in class and other arrangements have not been made, the students are automatically dismissed after ten minutes. (30 minutes for evening classes). A roll must be signed by the students present and turned in by one of them to the General Office.

SCHEDULE CHANGES

Students should consult with their advisor and the Student Personnel Office before making any changes in schedule.

Adding Courses — Courses may be added only through the 5th academic day of the quarter.

Dropping Courses & Withdrawing from School — Courses dropped during the first 3 weeks are recorded as W (Withdrawal).

Courses dropped after the third week but before the close of class on Friday of the ninth week will be recorded as WP (Withdrawal Passing) or WF (Withdrawal Failing). These grades are not computed in the cumulative quality point average, but do appear on the transcript.

A student who over-cuts a class may be dropped from class rolls at the discretion of the instructor.

WITHDRAWAL PROCEDURES

A student who intends to withdraw from *(drop)* a course or who intends *to withdraw from school,* must obtain forms for this purpose from the Office of the Registrar. Signatures of the advisor/counselor, the instructor for each course involved (and grade) and the Business Manager must be secured and the completed withdrawal form returned to the Registrar. (See Refund Policy).

ACADEMIC RECOGNITIONS

The *President's List* honors those students who qualify for the Dean's List but who obtain a 3.8 or higher quality point average for that quarter.

The *Dean's List* is published quarterly and contains the names of students who have quality point average of 3.3 to 3.79 for that quarter. No grade may be lower than C and the student must carry a minimum of 12 quarter credit hours to be eligible.

GRADUATION REQUIREMENTS

Students are required to apply as candidates for the diploma or the degree. This must be completed during the first two weeks of the last quarter of school attendance. This insures that the candidate's record will be properly reviewed, and that he will be notified of any deficiencies.

Requirements for the degree or diploma will vary according to curriculum. Course requirements for graduation are within this catalog. All students must have a grade point average of 2.0 (C average) to be eligible for graduation.

High Honors are awarded to those students who have earned a cumulative quality point average of 3.8 or higher while studying at the Institute.

Honors are awarded at Graduation to students who have earned a cumulative quality point average of 3.3 to 3.79 during their course of study.

Marshals for graduation are selected on the basis of having the two highest averages in the class to graduate the following year. Two students receive this honor.

Ushers for graduation are also selected on the basis of outstanding academic performance.

STUDENT LIFE

The education within any institution of higher learning is characterized not only by the quality of its academic program it offers, but also in the opportunity it offers for its members to grow and learn about themselves. The development of relationships among people of varying natures and backgrounds and the involvement and learning through participation in student functions and activities is very much a part of the campus life.

STUDENT GOVERNMENT

The Student Government Association provides democratic self-government for the students of the Institute. The Association is divided into the Executive Committee, composed of the Student Body President, Vice-President, Secretary and Treasurer; and the Senate, composed of elected representatives from each of the five curriculum divisions.

The Student Government Association is responsible for developing policies and programs for the general welfare of the Student Body. All campus clubs, student organizations, and athletics programs are approved through the Student Government Association.

The Student Review Board is a standing committee of the Student Government Association. Composed of student representatives, the Board hears the appeals of the students accused of violations of policy or regulations of TIA.

STUDENT ACTIVITIES

The variety of campus organizations and clubs provide a place for every student to become involved and be of service to the Institute and the community. Many opportunities for self-exploration and leadership are to be found in Student Activities.

Clubs

CIRCLE K — affiliated with Kiwanis International — is an organization of young men and women whose purpose is to emphasize the advantages of the American-Canadian way of life as it provides an opportunity for leadership training through service to the campus and community.

ROTARACT CLUB — dedicated to the development of the constructive leadership and personal integrity of its young men and women. Emphasis is on individual responsibility as the basis of personal success, community improvement and group achievement.

CHOIR — made up of young men and women who enjoy music and like to sing.

CHEERLEADERS ASSOCIATION — members are elected by the Student Body. The association is co-educational. They lead the cheering at all basketball events.

BLACK STUDENT UNION — the purpose of this organization is to provide tutoring services to TIA students, fund raising for sickle-cell anemia and Thanksgiving baskets to needy families.

Membership in clubs and organizations at TIA is open to all students without regard to race, sex, nationality or religion.

Athletic

TIA has an outstanding program and record in the area of sports. You are encouraged to add your talents and enthusiasm to make another winning year for the Titans. See the Student Activities Coordinator for more information.

BASKETBALL — Conference. (Piedmont Athletic Conference of Technical Institutes).

SOFTBALL — City League of Burlington.

GOLF — Non-conference.

BOWLING — Non-conference.

VOLLEYBALL — YMCA Tournament.

TENNIS — Non-conference.

Publications

THE ECHO — This newspaper is published by the students at the Technical Institute of Alamance. The paper provides coverage of campus news events, publicity for activities, and other news of special interest to the student body. Students in Journalism 212 earn credit for work on the newspaper. All staff members work under the instruction of a professional.

THE TITAN — The yearbook is published annually and depicts campus activities and student life. It is compiled and edited by a student staff with the advisement of a professional.

THE STUDENT HANDBOOK — Published through the Student Personnel Office, the handbook provides information of concern to students, including student regulations, policies, student government, and student activities.

STUDENT POLICIES

Student Conduct

Students will be expected to conduct themselves at all times as individuals of prudence and maturity. The rights and feelings of others will be respected. Students shall demonstrate a high regard for school facilities and property and for the personal property of others.

School regulations which serve to control such activities as vehicular traffic and parking, smoking, and other aspects of personal conduct must be observed. Students may be suspended or dismissed for conduct which is considered incompatible with standards of propriety and good judgment.

Re-admittance of dismissed students at a subsequent session will be at the discretion of the President. Students may appeal a suspension or dismissal decision by letter to the Board of Trustees via the President.

Dress Code

It is not the intent of the Institute to impose upon individual style and creativity. Rather, it would encourage all students to dress in a manner in keeping with the serious academic intent of the Institute and in a manner acceptable to the community which the Institute serves.

In light of this, TIA students are expected to use their own judgment in what is appropriate dress. Because of the hazards created in the building, bare feet are prohibited.

DISRUPTIVE POLICY

SEC. I-1 Definition of Disruptive Conduct

The Technical Institute of Alamance honors the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that in a community of learning willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated.

(a) Any student, faculty member (including full-time or part-time instructor), or employee who willfully by use of violence, force, coercion, threat, intimidation or fear, obstructs, disrupts or attempts to obstruct or disrupt, the normal operations or functions of the Technical Institute of Alamance, or who advises, procures, or incites others to do so, shall be subject to suspension, expulsion, discharge, or dismissal from the Institute. The following, while not intended to be exclusive, illustrate the offenses encompassed herein: occupation of the Institute building or part thereof with intent to deprive others of its use; blocking the entrance or exit of the Institute building or corridor or room therein; setting fire to or by any other means substantially damaging building or property, or the property of others on the Technical Institute premises; except as necessary for law enforcement, any display of or attempt or threat to use firearms or explosives or, for the purpose of intimidating, other weapons, in the Institute building or on the Institute campus; prevention of the convening, continuation or orderly conduct of any Institute class or activity or of any lawful meeting or assembly in the Institute building or on the Institute campus; inciting or organizing attempts to prevent student attendance at classes; and, except with the permission of the President, blocking normal pedestrian or vehicular traffic on the Institute campus.

(b) The possession of bowie knives, dirks, daggers, loaded canes, sword canes, machetes, pistols, rifles, repeating rifles, shotguns, pump guns, or other firearms or explosives upon the Institute campus or in the Institute owned or operated facility, unless explicitly permitted by the President or his designated representative in writing, is forbidden. Violation of this prohibition constitutes grounds for suspension from the Institute.

(c) Any faculty member (including any full-time or part-time instructor) who, with intent to obstruct or disrupt the normal operations or functions of the Institute, willfully fails or refuses to carry out validly assigned duties shall be subject to discharge.

SEC. I-2 Responsibility of the President

When it appears that there is a violation of Section I-1 (a), (b), or (c), it shall be the duty of the President, and he is fully authorized to act, to take all steps which he deems advisable to protect the best interest of the Technical Institute of Alamance, and to see that its Rules, Regulations and Policies are enforced. He shall insure that any person or persons found guilty after hearing shall be disciplined in such manner as may be warranted.

In carrying out these duties, the President may call upon any member of the Institute Administration, or member of the Faculty, and he may call upon any agency created to deal with cases arising under Section I-1. Conviction in any State or Federal Court shall not preclude the Institute from exercising its disciplinary authority in any offense under this or any other section of the policy.

Subject to the provisions of Section I-1 through I-4 of these policies, it shall be the duty of the President to exercise full authority in the regulation of student conduct and in matters of student discipline in the institution. In the discharge of this duty, delegation of such authority may be made by the President to faculty committees and to administrative or other officers of the institution, or to agencies of student government, in such manner and to such extents as may by the President be deemed necessary and expedient; provided, that in the discharge of this duty it shall be the duty of the President to secure to every student the right of due process and fair hearing, the presumption of innocence until found guilty, the right to know the evidence and to face witnesses testifying against him, and the right to such advice and assistance in his own defense as may be allowable under the regulations of the institution as approved by the President. In those instances where the denial of any of these rights is alleged, it shall be the duty of the President to review the proceedings.

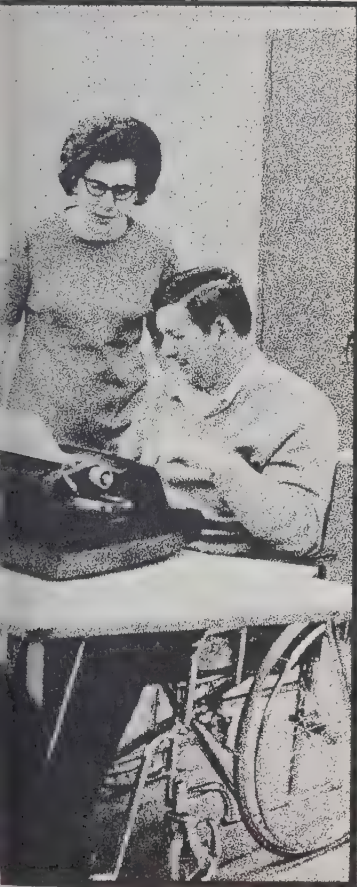
SEC. I-3. Responsibility of the Trustees

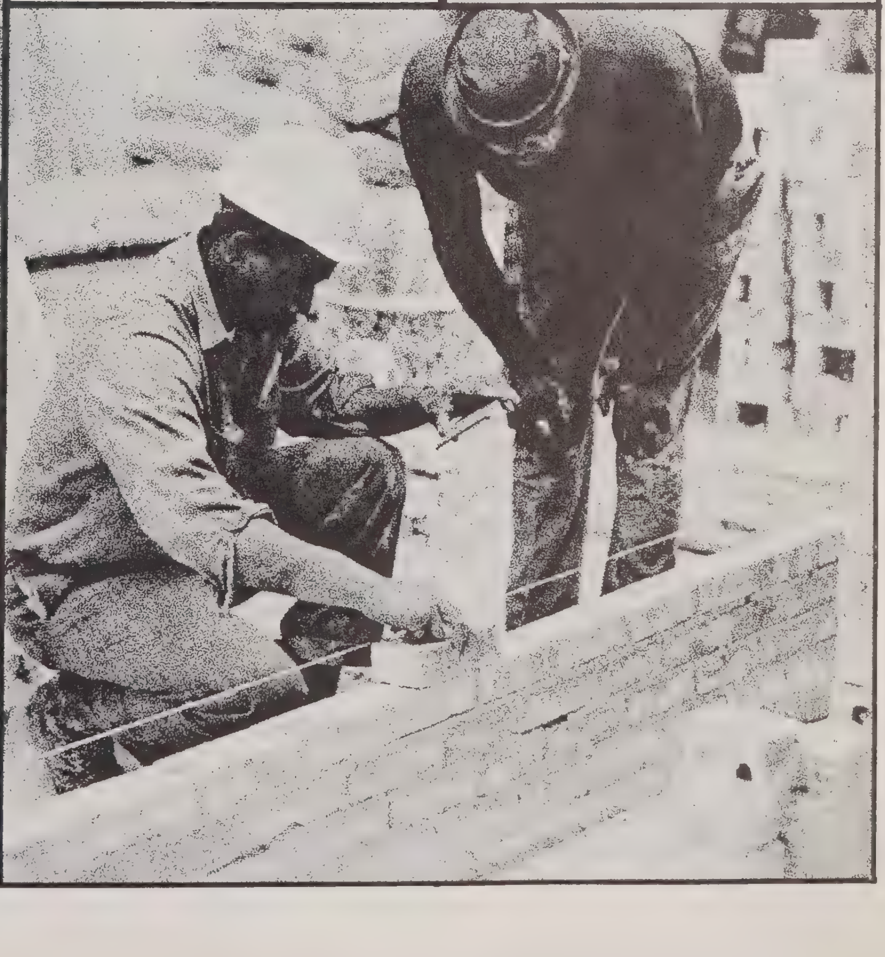
The Trustees recognize that by statute they have the power to make such rules and regulations for the management of the Institute as they may deem necessary and expedient, not inconsistent with the constitution, laws of the State, and policies of the State Board of Education. While the Trustees fully appreciate their obligation in this respect, they further recognize that in dealing with those offenses against the Institute defined in Section I-1 (a), (b), or (c) hereof, they must impose the duty and authority of enforcing the policies set forth herein in the Chief Administrative Office of the Institute — the President. It will be the responsibility of the Trustees to furnish all possible assistance to the President when requested by him.

SEC. I-4. No Amnesty

No administrative official, faculty member, student, or employee of the Institute shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state, or federal, or before any student, faculty, administrative, or Trustee committee to any person charged with or suspected of violating Section I-1 (a), (b), or (c) of these Policies.

GENERAL ADULT EDUCATION





The Department of General Adult Education provides the adult community with a wide range of educational opportunities. Programs and courses are developed to meet the needs and interests of the general public or of local industry personnel and community agencies.

The adult at any educational level may select programs or courses to help him meet his objectives or educational goals. One can also make special requests; new courses are developed whenever interest indicates a need. A call should be made to the institute to indicate this need.

Currently, there are four main categories of courses in this department. They are: Adult Basic Education; Adult High School; Self-improvement and General Interest; and Occupational Extension.

Individuals desiring further information should refer to the Adult Education Catalog. Those individuals needing assistance in planning their educational program should consult with a counselor at the Institute or call the Adult Education Office.

ADULT BASIC EDUCATION

Basic education (grades 1-8) is open to any adult at least 18 years old.

Classes usually meet twice weekly, three hours each night, and are located in various communities throughout Alamance and Caswell Counties. Reading, writing, spelling, and arithmetic make up the major areas of study.

The student may enter the program at any time, and progress at his own speed.

After finishing the eighth grade level, the student may enter the Adult High School program.

Cost: No charge.

ADULT HIGH SCHOOL

In cooperation with the Burlington City Schools, TIA offers a high school diploma program to adults who did not graduate from the public schools. The student may transfer completed units from his previous high school. Units may be earned at TIA through regular classroom study in the fields of English, mathematics, social studies, science, foreign language, and vocational training.

Students may enter the High School Program at the beginning of any quarter, approximately September 1, December 1, March 1, and June 1.

Graduates will be issued an Adult High School Diploma from the Burlington City School System.

Adults who already have a high school diploma may enroll in high school courses for refresher training. Those students considering further training after high school should plan the sequence of high school courses with the assistance of a counselor.

Cost: No charge except to purchase textbooks — $3 - $5 per course.

GENERAL EDUCATIONAL DEVELOPMENT TEST

High school equivalency examination. See Learning Laboratory section in this catalog.

SELF-IMPROVEMENT AND GENERAL INTEREST COURSES

A broad range of courses is offered in this area, including, but not limited to, the list below. Courses are offered day and night, for short durations, in order to fit the busy adult's schedule. Variations of course offerings are limited only by community interest and available instructors. Adults should call the Institute to express their areas of interest.

Cost: No charge.

Academic

Special Remedial Courses
College Preparatory Courses
Advanced Courses

Creative Arts

Music Reading Clinic
Painting and Drawing
Art Appreciation
Art Exhibits
Creative Writing

Parent Education

Adolescent Behavior
Pre-school Problems
Child Psychology
Maternity Care
Modern Math for Parents
Speech Therapy for Parents
Drug Abuse

Language Arts

Literature
Creative Writing

Hobby Courses

Small Engine Repair
Auto Tune-up at Home
Orientation to the Auto for Women
Ham Radio
Orientation to the Motorcycle
Volunteer Choir
Ground School for Private Pilots
Boating and Seamanship
Horse Care and Management

Citizenship

North Carolina History
American History
Political Parties
The Constitution
Forums on Community Affairs

Family Life

Mental Hygiene
Geriatrics
Community-Family Relations
Exceptional Children

Public Speaking
Speedreading
Effective Listening

Homemaking

Sewing
Tailoring
Interior Decorating
Nutrition
Landscaping and Gardening
Drapery Making

Foreign Languages

Conversational French
Conversational Spanish

Consumer Education

Family Finance
Law for the Layman
Consumer Problems
Personal Investments

OCCUPATIONAL EXTENSION

Extension courses are job-related part-time studies to increase skills of employees.

Special extension areas are state-wide in nature. These courses can be taken through many of the Community College Systems' institutions throughout the state, each issuing cumulative credits toward extension diplomas.

Cost: No charge.

Fire Service Training

Designed for full-time and volunteer firemen including courses such as:

Arson
Fire Brigade
Salvage Operation
Protective Equipment
First Aid and Rescue
Forcible Entry
Extinguisher Practices
Rope Practices
Home Fire Safety
Area Fire Schools

Hospitality Training

Designed for the hotel-motel and food service industry including such courses as:

Waitress Training
Housekeeping
Management
Communication
Promotion
Service Station Retailing
Food Preparation
School Food Service

Law Enforcement

Designed for law enforcement officers including such courses as:

Introduction to Police Science
Courts and Law
Elements of Arrest
Search and Seizure
Evidence
Investigation
Motor Vehicle Law
Liquor Law
Administration
Human and Public Relations
Riot Control
Chemical Tests for Alcohol

Business Education

Beginning Typing
Shorthand Review
Office Machines

Business English
Beginning Shorthand
Key Punch
Bookkeeping
Secretarial Practices
Advanced Typing
Advanced Shorthand
Accounting
Stenoscript — ABC Shorthand
Business Law

Management Development Programs

Designed for the supervisory or pre-supervisory level including courses in:

*Principles of Supervision
*Human Relations
*Act of Motivating People
*Economics in Business and Industry
*Job Methods
Conference Leadership
Job Instruction Training
*Creative Thinking
Industrial Safety and
  Accident Prevention
The Effective Executive
*Effective Communications
Effective Writing
Effective Speaking
Reading Improvement
Work Measurement
*Industrial First Aid
The Supervisor in North Carolina
The Supervisor and Employee Benefits
*Job Analysis Training
Cost Accounting for Supervisors
Employee Evaluation & Interviewing

A diploma in Management Development Programs is offered by the Department of Community Colleges in cooperation with the Technical Institute of Alamance. Supervisors may qualify for a MDP Diploma by completing nine required supervisory courses totaling

174 clock hours of instruction.

* Denotes required courses for Diploma

Extension courses are also developed to meet local needs as they arise. Courses are offered day or night, for various durations, to meet the working adult's schedule. The following courses represent examples of possible offerings:

Vocational

Basic Electricity
Air Conditioning
Machine Shop
Auto Mechanics
Drafting
Slide Rule
Blueprint Reading
Radio-TV Repair
Home Appliance Repair
Bricklaying
Farm Electrification
Apprenticeship Training
Power Sewing
Tractor Repair
Nurses Aide
Child Care
Small Engine Repair

Technical

Electronics
Computer Operation
Chemistry
Fabric Design
COBOL — Common Business Oriented Language
Precision Measurements

Professional

Review for Licensed Professional Engineers
Refresher for Registered Nurses

Fundamentals of Real Estate
Methods of Teaching Vocational Subjects
Graduate Courses in Education (In cooperation with graduate schools)
Advanced Pharmacology for Licensed Practical Nurses

Other special programs may be offered to meet the training requirements of a specific business or industry.

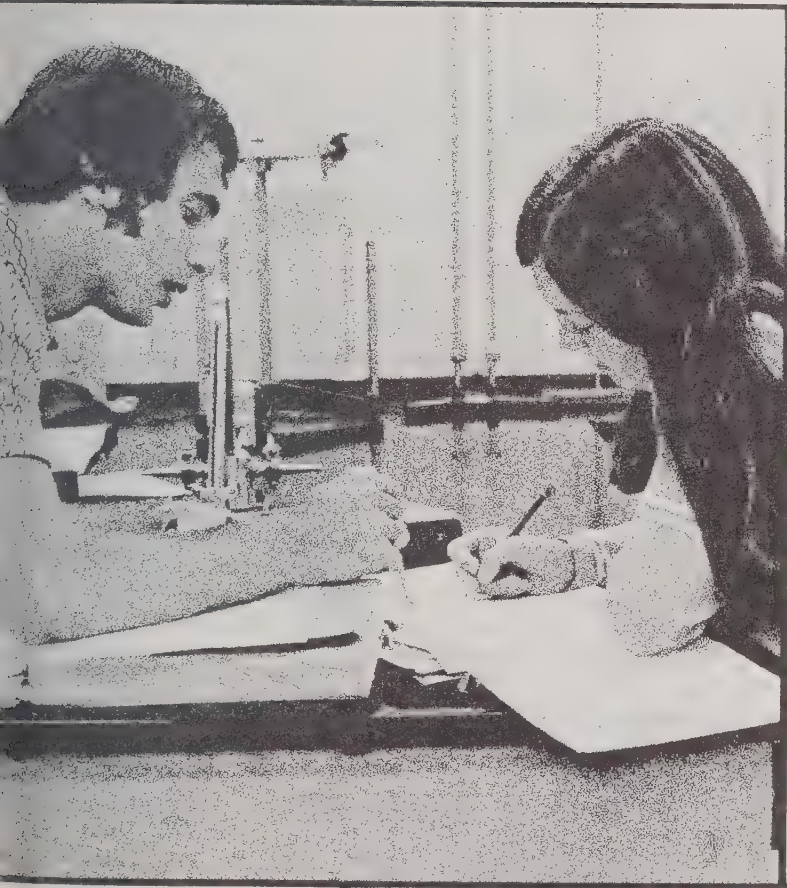
Instructional Personnel

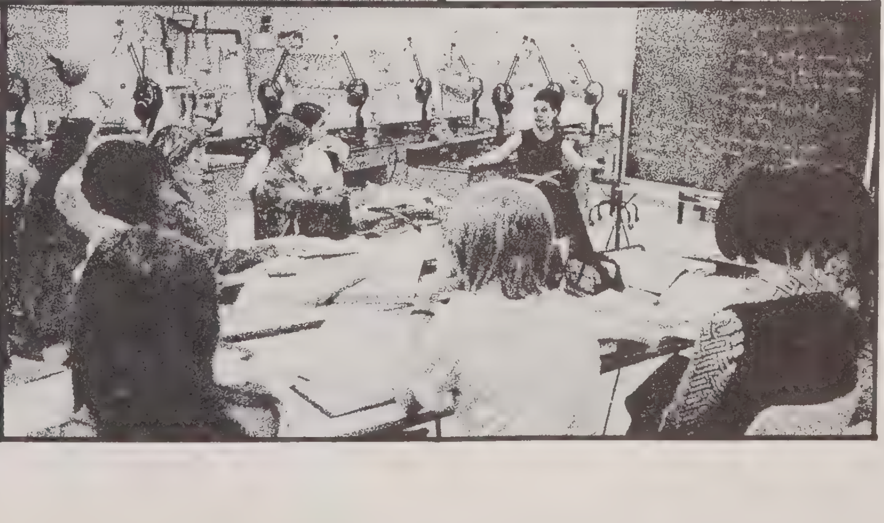
Instructors are individuals who are academically qualified and/or who have *demonstrated successful work experience* in the subject area to be taught. Frequent use of case studies, audio-visual aids, and class participation insure a high degree of student interest.

Location and Time:

Classes are held both day and night at the Technical Institute at the sites of employment, and at various other locations convenient to the community.

CURRICULUM





Curriculum refers to all courses for which credit is given toward the Associate in Applied Science Degree or the Diploma.

PROGRAMS OF STUDY

The Technical Institute of Alamance offers the following programs of study:

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

Applied Arts	*Curriculum Code*
Audiovisual Technology	T-066
Commercial Art and Advertising Design	T-070
Technical Illustration	T-072
Business Technologies	
Business Administration	T-018
Business Data Processing	T-022
General Office Technology	T-033
Medical Secretary	T-032
Scientific Data Processing	T-023
Technical Secretary	T-029
Engineering Technologies	
Air Conditioning and Refrigeration Technology	T-036
Chemical Technology	T-037
Drafting and Design Technology	T-043
Electronics Engineering Technology	T-045
Industrial Engineering Technology	T-047
Public Service Technology	
Fire Science	T-063

DIPLOMA PROGRAMS

Human Services	
Dental Assisting	V-011
Practical Nursing	V-038
Child Care	V-067
Mechanical Occupations	
Air Conditioning and Refrigeration Mechanics	V-024
Advanced Air Conditioning & Refrigeration	V-024

Automotive Mechanics	V-003
Advanced Automotive Mechanics	V-003
Machinist Trade	V-032
Advanced Machinist	V-032
Mechanical Drafting	V-017

DEVELOPMENTAL STUDIES

Before taking certain courses in a given curriculum program, some students may need to correct a deficiency in or review mathematics, or communications. Building a strong background in these areas helps assure success in the chosen curriculum.

The need for developmental work is determined through placement testing and student-counselor conferences during the admissions process. Where appropriate, the student may be scheduled for developmental business math, technical math, English, and/or social studies.

There are several advantages in taking the developmental courses. They are designed to enable the student to work at his own rate of learning and to allow the student to continue the course beyond one quarter if additional time is needed. When the objectives of the course are mastered, credit for the comparable curriculum course is granted. Thus, the student can make continual progress toward graduation although *additional quarters will probably be needed to complete the program.*

CONTACT HOURS AND CREDIT HOURS

Quarterly credit hours are awarded to students on the following arrangements:

Class Work is lecture and other classroom instruction.

Credit of one quarter hour for *each hour* of class work per week for eleven weeks. The average hour of class will require two hours of assigned homework, for an average student.

Laboratory involves demonstration by instructor, experimentation and practice by students.

Credit of one quarter hour for *each two hours* of laboratory work per week for eleven weeks. One hour of assigned homework will accompany an average laboratory period of two hours.

Manipulative Laboratory involves development of manual skills and job proficiency.

Credit of one quarter hour for *each three hours* of manipulative lab for eleven weeks. No outside work will ordinarily be assigned to accompany this shop period.

Symbols

C = Class Hrs. Per Week
CH = Credit Hrs. Per Qtr.
L = Lab Hrs. Per Week
° = Manipulative Lab

PREREQUISITES

Prerequisites are indicated for most courses offered at TIA. These are intended to give the student some measure of the proficiency expected for those beginning a given course. In the event where other courses and/or experiences might qualify the student to take the course, the instructor may permit him to enroll.

ASSOCIATE DEGREE PROGRAMS

The Associate in Applied Science Degree is a two year degree designed to prepare the graduate to enter his chosen field as a highly skilled technician.

Admissions Requirements

To be admitted to the two-year Associate in Applied Science Degree programs, the applicant must qualify as follows:

1. Be 18 years of age and a high school graduate or have a North Carolina approved equivalent education.
2. Complete the general admissions procedures as outlined in "Curriculum Admissions and Procedures" p. 11.
3. Demonstrate an aptitude for his desired training through placement testing and student-counselor conferences.
4. Meet the specific requirements of the department to which he is applying. These are as follows:

Air Conditioning and Refrigeration Technology	— 2 units of Algebra*
Business Data Processing	" " " "
Chemical Technology	" " " "
Drafting & Design Technology	" " " "
Electronics Engineering Technology	" " " "
Industrial Engineering Technology	" " " "
Scientific Data Processing	" " " "

*or one unit each of Algebra and Plane Geometry.

Commercial Art and Advertising Design
Audiovisual Technology
Technical Illustration

Draw the following on appropriate 8½" x 11" paper. Do not use oil paint, illustration board, mats, or frames of any kind. Pen and ink, tempera, wash, water colors, conte crayon and pastels (with a fixative) may be used.

A. A picture representing "An Exciting Event in My Life"
B. A self portrait.
C. One of the following:
    1. Design a travel poster and give the information which you consider relevant.
    2. Design and render in perspective a product such as an automobile, home appliance, or telephone.

It is suggested that students should have completed one unit of physical science with laboratory.

Facilities are available at the Institute for removal of academic deficiencies.

DIPLOMA PROGRAMS

The Diploma is a one year program designed to provide the student with the skills of his chosen trade.

Admission Requirements

To be admitted to the one-year Diploma programs the applicant must qualify as follows:

1. Be at least 18 years of age and have the ability to enter into or make advancement in the area in which enrolled.
2. Have satisfactorily completed a minimum of eight (8) units of accredited secondary school work. Those who have not successfully completed eight (8) units of such work will be required to take other standard and/or local institution tests.
3. Demonstrate by placement tests and student/counselor conferences aptitude to insure ability to meet job requirements in the desired trade.
4. Meet the specific requirements of the department to which he is applying. These are as follows:

   Practical Nursing — An interview with a member of the Practical Nursing staff is required.

   Students upon acceptance to the department must report the result of a physical examination by a licensed physician. The results are to be reported on forms provided by the Institute.

Dental Assisting — An interview with a member of the Dental Assisting staff is required. All Dental Assistant applicants must have a high school diploma or a N. C. approved equivalent education as required by the American Dental Association under which this program is accredited.

Students upon acceptance to the department must report the results of a physical and dental examination by licensed physicians. The results are to be reported on forms provided by the Institute.

Child Care — An interview with a member of the Child Care staff is required.

Students upon acceptance to the department must report the result of a physical examination by a licensed physician. The results are to be reported on forms provided by the Institute.

It is suggested that students should have completed one unit of Algebra.

Facilities are available at the Institute for removal of deficiencies.

Applicants should refer to page 20 for information about special materials and equipment required for their programs.

Applied Arts

Applied Arts consists of Commercial Art & Advertising Design, Audio-visual Technology, and Technical Illustration. These programs, for the first three quarters, have a common core curriculum. Beginning with the fourth quarter students will choose one of these programs for specialization.

Specific admission requirements are outlined on page 47.

AUDIOVISUAL TECHNOLOGY

Purpose

The Audiovisual Technology Program provides students with knowledge and skills in the production of communications media, including photography, film, graphic arts, television, sound recording, and various combinations of these media. Audiovisual courses include such subjects as materials and machines used in the field, specific audiovisual skills and their relationship to the learning process, and conversion of ideas into audio and/or visual materials. As a part of their course work, students create audiovisual materials for use in live teaching situations.

Job Description

Graduates will work in audiovisual or instructional resource centers of schools and colleges, or in commercial and industrial audiovisual departments, preparing training aids and advertising materials.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
ENG	101	Composition I	3	0	3
DES	116	Basic Photography	2	6	4
DES	101	Basic Drawing & Design	3	9°	6
ART	106	Art History I	3	0	3
			11	15	16

Second Quarter

			C	*L*	*CH*
ENG	102	Composition II	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	107	Drawing	0	6	2
DES	124	Type and Lettering	3	6	5
ART	107	Art History II	3	0	3
			12	12	16

Third Quarter

			C	*L*	*CH*
DFT	101	Technical Drafting I	2	4	3
PSY	108	Psychology of Communications	3	0	3
DES	108	Illustration	0	6°	2
DES	218	Commercial Graphics & Photography	3	6°	5
			8	16	13

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
AVT	201	Audiovisual Technology I	3	9°	6
		Social Science Elective	3	0	3
		Elective (major)	3	0	3
			11	11	15

Fifth Quarter

			C	L	CH
AVT	202	Audiovisual Technology II	3	9°	6
AVT	210	Audiovisual Equipment Care & Maintenance	2	4°	3
AVT	220	Information Resources	3	0	3
ENG	204	Oral Communications	3	0	3
		Elective (major)	3	0	3
			14	13	18

Sixth Quarter

			C	L	CH
AVT	203	Audiovisual Technology III	3	9°	6
AVT	212	Audiovisual Department Procedures	3	0	3
DES	240	Senior Project	2	6	4
		Social Science Elective	3	0	3
		Elective (major)	3	0	3
			14	15	19
		Total			99

ELECTIVES

Electives for the *Audiovisual Technology* Curriculum may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

MAJOR

			C	L	CH
ART	240	Metal Sculpturing	1	3	2
ART	239	Selective Media	2	3	3
PSY	221	Psychology of Color	3	0	3
ART	231	Painting with Polymers	2	6	4
AVT	250	Advanced Production	1	6°	3°
DES	211	Three Dimensional Design	1	3	2

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institution	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

COMMERCIAL ART & ADVERTISING DESIGN

Purpose

Surveys have shown an increase in the demand for graduates possessing training in the field of Commercial Art and Advertising Design. The curriculum will prepare a graduate with a sound, well-rounded background for technical and creative achievement throughout his professional life. Design and illustration for commerce is continually advancing its standards, therefore, the background offered the student must be well-developed to prepare him for performance on a contemporary professional level. Graduates of this program will have an adequate background in illustration, layout and lettering, design, and production enabling them to be employed in some facet of Commercial Artistry.

Equipped with professional competence and the potential for continuing growth and improvement, graduates are qualified for employment in advertising agencies, design studios, department stores, industrial advertising departments, government agencies, newspapers, television studios, printing and publishing houses.

Job Description

The commercial artist or advertising designer creates and designs layouts and illustrations for printing, creates posters, signboards, billboards, and show cards. He may design and prepare charts, diagrams, sketches, and maps for publication and exhibition, perform responsible illustrative work for package design, photography, lettering, and art work for the printing processes. Opportunities for graduates of this program may be in advertising agencies, newspapers and magazines, television studios, industrial advertising departments and design studios, department stores, government agencies, or in printing and publishing houses.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
DES	116	Basic Photography	2	6	4
DES	101	Basic Drawing & Design	3	9°	6
ART	106	Art History I	3	0	3
			11	15	16

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
DES	110	Creative Problem Solving	3	0	3

DES	107	Drawing	0	6	2
DES	124	Type and Lettering	3	6	5
ART	107	Art History II	3	0	3
			12	12	16

Third Quarter

			C	L	CH
DFT	101	Technical Drafting I	2	4	3
PSY	108	Psychology of Communications	3	0	3
DES	108	Illustration	0	6°	2
DES	218	Commercial Graphics & Photography	3	6°	5
			8	16	13

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
DES	210	Advertising Design I	3	9°	6
DES	214	Advertising Illustration	1	3	2
		Social Science Elective	3	0	3
		Elective	3	0	3
			12	14	17

Fifth Quarter

			C	L	CH
ENG	204	Oral Communications	3	0	3
DES	220	Advertising Design II	3	9°	6
DES	235	Advertising and Marketing	5	0	5
DES	238	Advertising Studio	0	6°	2
		Elective	3	0	3
			14	15	19

Sixth Quarter

			C	L	CH
DES	230	Advertising Design III	3	9°	6
DES	240	Senior Project	2	6°	4
DES	242	Portfolio	0	6°	2
		Social Science Elective	3	0	3
			8	21	15
		Total			98

ELECTIVES

Electives for the Commercial Art & Advertising Design Curriculum may be selected from the following courses. The school will determine which of these are to be offered in any quarter of the program.

TECHNICAL

			C	L	CH
ART	231	Painting with Polymers	2	6	4
ART	239	Selective Media	2	3	3
ART	240	Metal Sculpturing	1	3	2
PSY	221	Psychology of Color	3	0	3
DES	211	Three Dimensional Design	1	3	2

SOCIAL SCIENCE

			C	L	CH
ECO	102	Economics	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	205	American Institutions	3	0	3
SSC	203	Environmental Studies	3	0	3

TECHNICAL ILLUSTRATION

Purpose

The purpose of the illustrator is to provide communication between engineers who design equipment and those who use or service the products. Illustrations may appear in industrial catalogs, aircraft handbooks, training aids, engineering designs and tooling problems, assembly sheets, and promotional literature. They are generally drawn by one of the axonometric or perspective methods and may show part details, cutaway views, exploded assemblies, or part installations.

As American industry has grown, technical illustrators have become more important in providing illustrations to solve a great number of problems in design, manufacturing, assembly, operation, and maintenance of technical equipment. By the use of an illustration which is normally superior to the spoken or written word, illustrators can convey the information necessary to give a clear and concise description of a complicated form. The pictorial language is becoming more necessary because of the steadily increasing complexity of the machines of modern living. Technical illustration has evolved into an occupation that makes an important contribution to industry and to the strength of the nation.

Job Description

The technical illustrator has the ability to describe the shape, dimensions, assembly, and installation of an object. Information for illustrations is taken from blueprints, technical sheets, engineering sketches, photographs, or the actual parts. The technical illustrator must be able to visualize this technical data in three dimensions, judge what the best methods of presentation are, plan his layout, make an accurate drawing, and finish this drawing according to the commercial or military specifications to which he is working. In addition to being technically and artistically correct, the drawing must also be done within acceptable time limits.

He may lay out and draw schematic, perspective, orthographic, or pictorial views to depict function, relationship, and assembly sequence of parts and assemblies, such as gears, mechanisms, and instruments. He shades or colors drawings to emphasize details or to eliminate undesired background, using ink, crayon, airbrush, and overlays. Pastes instructions and comments in position on drawing. May draw cartoons and caricatures to illustrate operations in maintenance, and safety manuals or posters.

In most illustration departments, a new employee begins with the simple jobs and progresses to the most difficult ones as he gains confidence and experience.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
DES	116	Basic Photography	2	6°	4
DES	101	Basic Drawing & Design	3	9°	6
ART	106	Art History	3	0	3
			11	15	16

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	107	Drawing	0	6°	2
DES	124	Type and Lettering	3	6°	5
ART	107	Art History II	3	0	3
			12	12	16

Third Quarter

			C	L	CH
DFT	101	Technical Drafting I	2	4	3
PSY	108	Psychology of Communications	3	0	3
DES	108	Illustration	0	6°	2
DES	218	Commercial Graphics & Photography	3	6°	5
			8	16	13

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
DES	250	Technical Illustration I	3	9°	6
DFT	204	Descriptive Geometry	2	4	4
		Electives (major)	4	0	4
			11	15	17

Fifth Quarter

			C	L	CH
DES	251	Technical Illustration II	3	9°	6
MEC	101	Machine Processes	0	6°	2
DES	239	Rendering (Basic)	2	3°	3
		Social Science Elective	3	0	3
		Electives (major)	4	0	4
			12	18	18

Sixth Quarter

			C	L	CH
DES	252	Technical Illustration	3	9°	6
DES	240	Senior Project	2	6°	4
		Social Science Elective	3	0	3
		Electives (major)	4	0	4
			12	15	17
		Total			99

ELECTIVES

Electives for the *Technical Illustration Curriculum* will be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

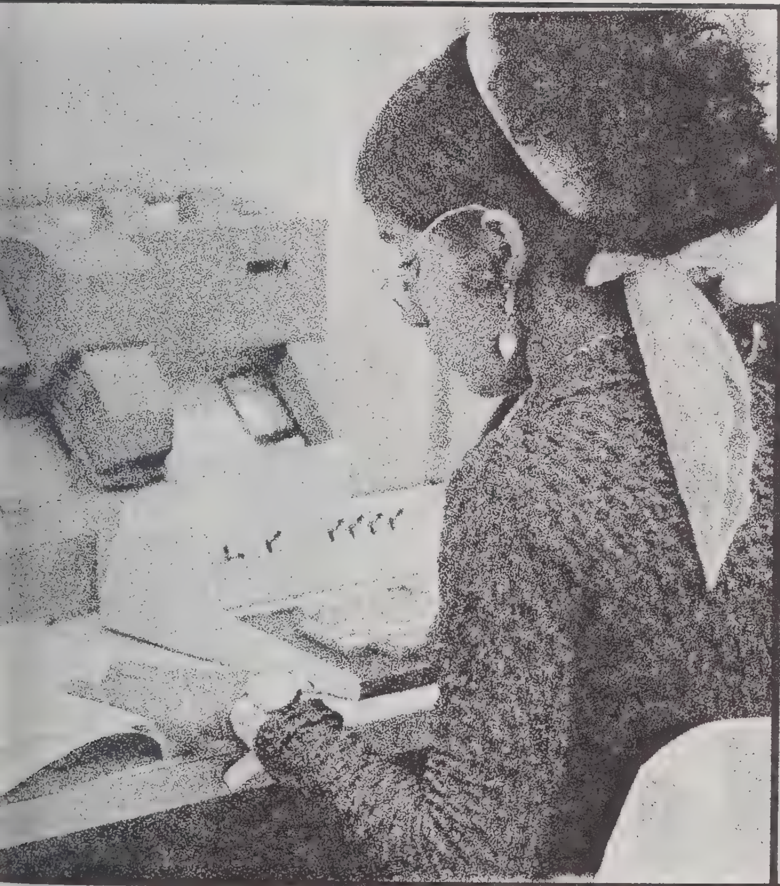
TECHNICAL ILLUSTRATION

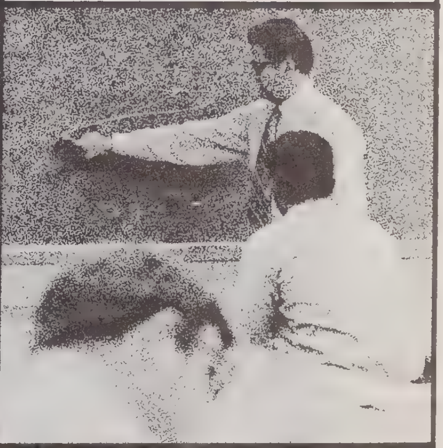
			C	L	CH
PSY	221	Psychology of Color	3	0	3
ELN	110	Introduction to Electronics	3	0	3
DES	262	Technical Publications	2	3°	3
DES	248	Air Brush	2	3°	3
DES	249	Architectural Rendering	2	3°	3
ART	231	Painting with Polymers	2	6°	4
ART	239	Selective Media	2	3°	3
DES	260	Special Projects	1	6°	3
DES	211	Three Dimensional Design	1	3	2

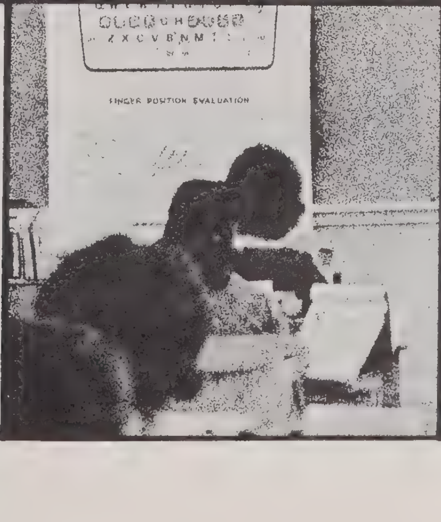
SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

Business Technologies



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FINGER POSITION EVALUATION

APRIL 25

BUSINESS ADMINISTRATION

Purpose

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this State, business has become more competitive and automated. Better opportunities in business will be filled by students with specialized education beyond the high school level. The Business Administration Curriculum is designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in many phases of administrative work that might be encountered in the average business.

The specific objectives of the Business Administration Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding our economy through study and analysis of the role of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.
4. Understanding and skill in effective communication for business.
5. Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

Job Description

The graduate of the Business Administration Curriculum may enter a variety of career opportunities from beginning sales person or office clerk to manager trainee. The duties and responsibilities of this graduate vary in different firms. These encompassments might include: making up and filing reports, tabulating and posting data in various books, sending out bills, checking calculations, adjusting complaints, operating various office machines, and assisting managers in supervising. Positions are available in businesses such as advertising; banking; credit; finance; retailing; wholesaling; hotel, tourist, and travel industry; insurance; transportation; and communications.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
BUS	115	Business Law	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
			18	3	19

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
		Business Elective	3	0	3
BUS	120	Accounting I	5	2	6
ECO	102	Economics	3	0	3
BUS	116	Business Law	3	0	3
			17	2	18

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	121	Accounting II	5	2	6
ECO	104	Economics	3	0	3
BUS	110	Office Machines	2	2	3
BUS	239	Marketing	5	0	5
			18	4	20

Fourth Quarter

			C	L	CH
EDP	103	Introduction to Computer Concepts	4	0	4
ENG	103	Report Writing	2	2	3
BUS	123	Finance I	3	0	3
BUS	272	Supervision	3	0	3
		Business Elective	3	0	3
			15	2	16

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	243	Advertising	3	0	3
BUS	235	Business Management	3	0	3
BUS	124	Finance II	3	0	3
		Social Science Elective	3	0	3
		Business Elective	3	0	3
			18	0	18

Sixth Quarter

			C	L	CH
BUS	229	Taxes	3	2	4
BUS	271	Office Management	3	0	3
BUS	232	Sales	3	0	3
		Social Science Elective	3	0	3

			C	L	CH
		Business Elective	3	0	3
			15	2	16
		Total			107

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
BUS	101	Introduction to Business	5	0	5
ENG	101	Composition	3	0	3
ECO	102	Economics	3	0	3
			11	0	11

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
ECO	104	Economics	3	0	3
BUS	115	Business Law	3	0	3
		Business Elective	3	0	3
			12	0	12

Third Quarter

			C	L	CH
BUS	116	Business Law	3	0	3
MAT	110	Business Mathematics	5	0	5
ENG	204	Oral Communications	3	0	3
			11	0	11

Fourth Quarter

			C	L	CH
BUS	102	Typewriting I	2	3	3
BUS	123	Finance I	3	0	3
ENG	103	Report Writing	2	2	3
			7	5	9

Fifth Quarter

			C	L	CH
BUS	120	Accounting	5	2	6
BUS	124	Finance II	3	0	3
ENG	206	Business Communication	3	0	3
			11	2	12

Sixth Quarter

			C	L	CH
BUS	121	Accounting	5	2	6
EDP	103S	Introduction to Computer Concepts	4	0	4
			9	2	10

Seventh Quarter

			C	L	CH
BUS	110	Office Machines	2	2	3
BUS	229	Taxes	3	2	4
			5	4	7

Eighth Quarter

			C	*L*	*CH*
BUS	243	Advertising	3	0	3
BUS	239	Marketing	5	0	5
			8	0	8

Ninth Quarter

			C	*L*	*CH*
BUS	232	Sales Development	3	0	3
BUS	272	Principles of Supervision	3	0	3
		Business Elective	3	0	3
		Social Science	3	0	3
			12	0	12

Tenth Quarter

			C	*L*	*CH*
BUS	271	Office Management	3	0	3
BUS	235	Business Management	3	0	3
		Social Science	3	0	3
		Business Elective	3	0	3
			12	0	12

Eleventh Quarter

			C	*L*	*CH*
		Business Elective	3	0	3
			3	0	3
		Total			107

ELECTIVES

Electives for the *Business Administration Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

MAJOR

			C	*L*	*CH*
BUS	247	Business Insurance	3	0	3
BUS	233	Personnel Management	3	0	3
BUS	245	Retailing	3	0	3
BUS	237	Wholesaling	3	0	3
BUS	217	Business Law	3	0	3
BUS	300	Current Trends in Business	2	3	3
BUS	112	Filing	3	0	3
BUS	122	Accounting III	5	0	5
BUS	225	Cost Accounting	3	2	4
BUS	242	Sales Promotion	3	0	3
BUS	250	Real Estate	3	0	3

SOCIAL SCIENCE

			CL	*L*	*Cr*
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	206	Applied Psychology	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

BUSINESS DATA PROCESSING

Purpose

The processing of data by electronic equipment has created vast changes in business and industry. Nowhere are these changes more apparent than in the occupations associated with the handling of business information. Much of the routine and time-consuming work of obtaining, compiling and reporting the information necessary for a business to operate can now be adapted to machine processing.

This curriculum is designed to give the student (1) an understanding of the principles of business operation, (2) experience with techniques and handling business data, and (3) functional competence in the application of data processing systems, and experience in computer programming of business records and accounts, inventory, sales, and income and expenditures essential to business and to management decisions.

Emphasis is upon business data processing and use of machines in solving business problems.

Job Description

The business data processing specialist applies currently available programming techniques to a defined problem with minimum supervision. He analyzes and defines systems requirements to develop a program for electronic data processing; conducts detailed analyses of systems requirements, and develops all levels of block diagrams and logical flow charts. Translates program details into coded instructions; establishes test data; tests, refines, and revises program and documents the procedures. Ascertains if other combinations of instruction would achieve greater flexibility, better machine utilization, or more dependable results. He may prepare a complete set of operating instructions for use by a console operator; on occasion, operates the console in processing program.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
EDP	103	Introduction to Computer Concepts	4	0	4
EDP	110	Functional Wiring	3	2	4
MAT	101	Technical Mathematics	5	0	5
ENG	101	Composition I	3	0	3
			15	2	16

Second Quarter

			C	*L*	*CH*
EDP	114	Compiler Language I	2	4	4
MAT	112	Business Mathematics	5	0	5
BUS	120	Accounting I	5	2	6
ENG	102	Composition II	3	0	3
			15	6	18

Third Quarter

			C	*L*	*CH*
EDP	116	Assembler Language	2	4	4
BUS	121	Accounting II	5	2	6
MAT	214	Statistics	5	0	5
ENG	103	Technical Report Writing	2	2	3
			14	8	18

Fourth Quarter

			C	*L*	*CH*
EDP	118	Compiler Language II	2	4	4
EDP	211	Data Processing Application I	2	4	4
EDP	213	Computer Systems I	2	2	3
BUS	225	Cost Accounting	3	2	4
BUS	115	Business Law I	3	0	3
			12	12	18

Fifth Quarter

			C	*L*	*CH*
EDP	212	Data Processing Application II	2	4	4
EDP	214	Computer Systems II	2	2	3
ECO	102	Economics	3	0	3
		Elective—DP	3	0	3
		Social Science Elective	3	0	3
			13	6	16

Sixth Quarter

			C	*L*	*CH*
EDP	218	Data Processing Project	1	8	5
BUS	272	Supervision	3	0	3
ENG	204	Oral Communication	3	0	3
		Elective—Social Science	3	0	3
		Elective	3	0	3
			13	8	17
			Total		103

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	*L*	*CH*
EDP	110	Functional Wiring	3	2	4
ENG	101	Composition I	3	0	3
ECO	102	Economics	3	0	3
			9	2	10

Second Quarter			*C*	*L*	*CH*
EDP	103	Introduction to Computer Concepts	4	0	4
MAT	101	Technical Mathematics	5	0	5
			9	0	9

Third Quarter			*C*	*L*	*CH*
EDP	114	Compiler Language I	2	4	4
MAT	112	Business Mathematics	5	0	5
			7	4	9

Fourth Quarter			*C*	*L*	*CH*
EDP	116	Assembler Language	2	4	4
MAT	214	Statistics	5	0	5
			7	4	9

Fifth Quarter			*C*	*L*	*CH*
EDP	118	Compiler Language II	2	4	4
BUS	120	Accounting I	5	2	6
			7	6	10

Sixth Quarter			*C*	*L*	*CH*
EDP	213	Computer Systems I	2	2	3
BUS	121	Accounting II	5	2	6
			7	4	9

Seventh Quarter			*C*	*L*	*CH*
EDP	214	Computer Systems II	2	2	3
BUS	225	Cost Accounting	3	2	4
			5	4	7

Eighth Quarter			*C*	*L*	*CH*
EDP	211	Data Processing Application I	2	4	4
ENG	102	Composition II	3	0	3
		Social Science Elective	3	0	3
			8	4	10

Ninth Quarter			*C*	*L*	*CH*
EDP	212	Data Processing Application II	2	4	4
BUS	272	Supervision	5	0	3
ENG	103	Technical Report Writing	2	2	3
			9	6	10

Tenth Quarter

			C	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	115	Business Law	3	0	3
		Data Processing Elective	3	0	3
		Elective	3	0	3
			12	0	12

Eleventh Quarter

			C	*L*	*CH*
EDP	218	Research Project	1	8	5
		Elective	3	0	3
			4	8	8
			Total		103

ELECTIVES

Electives for the *Business Data Processing Curriculum* may be selected according to the needs of the student. The school may determine which of these are to be offered in any given quarter of the program.

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	Amercian Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

GENERAL OFFICE TECHNOLOGY

Purpose

More people are now employed in clerical occupations than in any other single job category. Automation and increased production will mean that these people will need more technical skills and a greater adaptability for diversified types of jobs.

The curriculum is designed to develop the necessary variety of skills for employment in the business world. Specialized training in skill areas is supplemented by related courses in mathematics, accounting, business law, and applied psychology.

Job Description

The graduate of the General Office Technology curriculum may be employed as an administrative assistant, accounting clerk, assistant office manager, bookkeeper, file clerk, machine transcriptionist, or a variety of other clerical-related jobs. Positions are available in almost every type of business, large or small.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
ECO	102	Economics	3	0	3
			18	3	19

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3	3
BUS	130	Secretarial Accounting	5	2	6
BUS	115	Business Law	3	0	3
BUS	112	Records Management I	3	0	3
			16	5	18

Third Quarter			*C*	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3	3

BUS	116	Business Law	3	0	3
BUS	111	Secretarial Office Machines	2	2	3
BUS	212	Machine Transcription	2	2	3
BUS	113	Records Management II	3	0	3
			15	7	18

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
EDP	103S	Concepts of Data Processing	4	0	4
BUS	205	Advanced Typewriting	2	3	3
BUS	213	Machine Transcription	2	2	3
BUS	232	Sales Development	3	0	3
		Business Elective	3	0	3
			16	7	19

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
		Social Science Elective	3	0	3
		Business Elective	6	0	6
			15	2	16

Sixth Quarter

			C	L	CH
BUS	211	Advanced Office Machines	2	2	3
BUS	272	Supervision	3	0	3
BUS	274	Secretarial Procedures II	3	2	4
BUS	105S	Typewriting Office Practice	2	3	3
		Business Elective	3	0	3
		Social Science Elective	3	0	3
			16	7	19
			Total		109

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
ECO	102	Economics	3	0	3
			8	3	9

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3°	3
BUS	115	Business Law	3	0	3
			8	3	9

Third Quarter

			C	L	CH
BUS	116	Business Law	3	0	3
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
			8	3	9

Fourth Quarter

			C	L	CH
BUS	112	Records Management I	3	0	3
BUS	205	Advanced Typewriting	2	3°	3
ENG	103	Report Writing	2	2	3
			7	5	9

Fifth Quarter

			C	L	CH
BUS	113	Records Management II	3	0	3
BUS	101	Introduction to Business	5	0	5
		Business Elective	3	0	3
			11	0	11

Sixth Quarter

			C	L	CH
MAT	110	Business Mathematics	5	0	5
EDP	103S	Introduction to Computer Concepts	4	0	4
			9	0	9

Seventh Quarter

			C	L	CH
BUS	130	Secretarial Accounting	5	2	6
BUS	212	Machine Transcription	2	2	3
			7	4	9

Eighth Quarter

			C	L	CH
BUS	213	Machine Transcription	2	2	3
BUS	111	Secretarial Office Machines	2	2	3
			4	4	6

Ninth Quarter

			C	L	CH
BUS	211	Advanced Office Machines	2	2	3
BUS	232	Sales Development	3	0	3
BUS	272	Principles of Supervision	3	0	3
			8	2	9

Tenth Quarter

			C	L	CH
PSY	112	Personality Development (or business elective)	3	0	3
ENG	206	Business Communication	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
		Social Science Elective	3	0	3
			12	2	13

Eleventh Quarter

			C	*L*	*CH*
PSY	206	Applied Psychology (or social science elective)	3	0	3
BUS	226S	Payroll Records and Accounting (or business elective)	3	0	3
		Business Elective	3	0	3
			9	0	9

Twelfth Quarter

			C	*L*	*CH*
BUS	274	Secretarial Procedures II	3	2	4
BUS	105S	Typing Office Production	2	3	3
			5	5	7
		Total			109

ELECTIVES

Electives for the *General Office Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

BUS	247	Business Insurance	3	0	3
BUS	245	Retailing	3	0	3
BUS	217	Business Law	3	0	3
BUS	215	Office Application	6	0	6
PSY	112	Personality Development	3	0	3
BUS	216	Office Reception Techniques	3	0	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

MEDICAL SECRETARY

Purpose

The demand for better qualified medical secretaries in our ever-expanding medical profession is becoming more acute. The purpose of this curriculum is to outline a training program that will provide specialized training in the accepted procedures required by the medical profession, and to enable persons to become proficient soon after accepting employment in the medical and health occupations.

The Medical Secretary Curriculum is designed to offer the students the necessary secretarial skills in typing, dictation, transcription, and terminology for employment in the medical profession. The special training in secretarial subjects is supplemented by related courses in mathematics, accounting, business law, and personality development.

Job Description

The graduate of the Medical Secretary Curriculum should have a knowledge of medical terminology, skill in dictation and accurate transcription of medical records, reports and letters. The duties of a medical secretary may consist of: taking dictation and transcribing letters, memoranda and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments. The graduate may enter a secretarial position in a variety of offices such as physicians', private and public hospitals, federal and state health programs, and the drug and pharmaceutical industry.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand I	3	2	4
			18	5	20

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3°	3
BUS	107	Shorthand II	3	2	4
BUS	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
BUS	108	Shorthand III	3	2	4
BUS	111	Secretarial Office Machines	2	2	3
BUS	183	Terminology and Vocabulary	3	0	3
			13	7	16

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
BUS	206M	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3°	3
BUS	284	Terminology and Vocabulary	3	0	3
EDP	103S	Concepts of Data Processing	4	0	4
			14	7	17

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	207M	Dictation and Transcription	3	2	4
BUS	115	Business Law	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
BUS	112	Records Management I	3	0	3
		Social Science Elective	3	0	3
			18	4	20

Sixth Quarter

			C	L	CH
BUS	208M	Dictation and Transcription	3	2	4
BUS	274	Secretarial Procedures II	3	2	4
BUS	211	Advanced Office Machines	2	2	3
BUS	113	Records Management II	3	0	3
		Elective	3	0	3
			14	6	17
		Total			112

ELECTIVES

Electives for the *Medical Secretarial Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

MAJOR

			C	L	Cr
BUS	215M	Office Application	6	0	6
ECO	108	Consumer Economics	3	0	3
ECO	102	Economics	3	0	3
PSY	112	Personality Development	3	0	3
BUS	116	Business Law	3	0	3
BUS	105S	Typing Office Production	2	3	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

SCIENTIFIC DATA PROCESSING

Purpose

The processing of data by electronic equipment has created vast changes in scientific research and industry. The curriculum of Scientific Data Processing is designed, especially in the second year, to assist students in preparing for the new techniques and stresses mathematics in each of the six quarters of work. The program provides graduates qualified to:

1. Apply currently available programming techniques to a defined problem with minimum supervision.
2. Program and operate any computer with a minimum of orientation.
3. Understand and master special techniques as the need occurs.
4. Communicate their properly documented programming decisions to personnel concerned.

Emphasis in the second year of the curriculum is upon scientific data processing. Machines are used in the solution of research, production and engineering problems.

Students learn calculus, numerical analysis, theory of probability and statistics.

Job Description

The scientific data processing specialist analyzes and defines requirements to develop programs for electronic data processing; conducts detailed analyses of systems requirements, and develops all levels of block diagrams and logical flow charts; translates program details into coded instructions; develops and prepares plans; establishes test data; refines, and revises program. Evaluates and modifies existing programs and procedures or content of reports change.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
EDP	103	Introduction to Computer Concepts	4	0	4
EDP	110	Functional Wiring	3	2	4
MAT	101	Technical Mathematics	5	0	5
ENG	101	Composition I	3	0	3
			15	2	16

Second Quarter

			C	L	CH
EDP	114	Compiler Language I	2	4	4
MAT	102	Technical Mathematics II	5	0	5
ENG	102	Composition II	3	0	3
BUS	120	Accounting I	5	2	6
			15	6	18

Third Quarter

			C	L	CH
EDP	116	Assembler Language	2	4	4
MAT	103	Technical Mathematics III	5	0	5
MAT	214	Statistics	5	0	5
ENG	103	Technical Report Writing	2	2	3
			14	6	17

Fourth Quarter

			C	L	CH
EDP	118	Compiler Language II	2	4	4
EDP	215	Statistical Programming	2	4	4
EDP	213	Computer Systems I	2	2	3
MAT	201	Technical Mathematics IV	5	0	5
		Social Science Elective	3	0	3
			14	10	19

Fifth Quarter

			C	L	CH
EDP	217	Numerical Analysis Programming	2	4	2
EDP	214	Computer System II	2	2	3
PHY	101	Physics I	3	2	4
		Elective—Social Science	3	0	3
		Elective—DP	3	0	3
			13	8	17

Sixth Quarter

			C	L	CH
EDP	218	Data Processing Project	1	8	5
PHY	102	Physics II	3	2	4
ENG	204	Oral Communication	3	0	3
		Elective	4	0	4
			11	10	16
		Total			103

ELECTIVES

Electives for the *Scientific Data Processing Curriculum* may be selected according to the needs of the student. The school will determine which of these are to be offered in any given quarter of the program.

SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

TECHNICAL SECRETARY

Purpose

The Technical Secretary Curriculum is designed to prepare a student for a position in the office of a firm dealing in research development and production in the scientific fields. The curriculum offers students the necessary secretarial skills and the required background of understanding and appreciation of the scientific method, and beginnings of a technical vocabulary and a feeling of respect for accuracy that will be essential in later work in the field.

Job Description

Graduates of this program may qualify for employment as stenographer-secretaries, technical secretaries, and possibly as private secretaries. They are in demand where engineers and other technical personnel find a need for secretarial help who can understand the specialized language of Electrical, Mechanical, Civil, or Chemical Engineers. The duties of an engineering and technical secretary may consist of taking dictation and transcribing letters, memoranda and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments. Graduates of this program, since they have received a background of science and engineering terminology in addition to their business background, are admirably prepared to work with engineering reports, records and correspondence.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand I	3	2	4
			18	5	20

Second Quarter

			C	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3	3
BUS	107	Shorthand II	3	2	4
BUS	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
BUS	108	Shorthand III	3	2	4
BUS	111	Secretarial Office Machines	2	2	3
BUS	115	Business Law	3	0	3
			13	7	16

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
BUS	206T	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3°	3
EDP	103	Concepts of Data Processing	4	0	4
		Elective	3	0	3
			14	7	17

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	207T	Dictation and Transcription	3	2	4
BUS	214	Secretarial Procedures I	3	2	4
BUS	112	Records Management I	3	0	3
		Social Science Elective	3	0	3
		Elective	3	0	3
			18	4	20

Sixth Quarter

			C	L	CH
BUS	208T	Dictation and Transcription	3	2	4
BUS	274	Secretarial Procedures II	3	2	4
BUS	211	Advanced Office Machines	2	2	3
BUS	113	Records Management II	3	0	3
		Elective	3	0	3
			14	6	17
		Total			109

ELECTIVES

Electives for the *Technical Secretarial Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

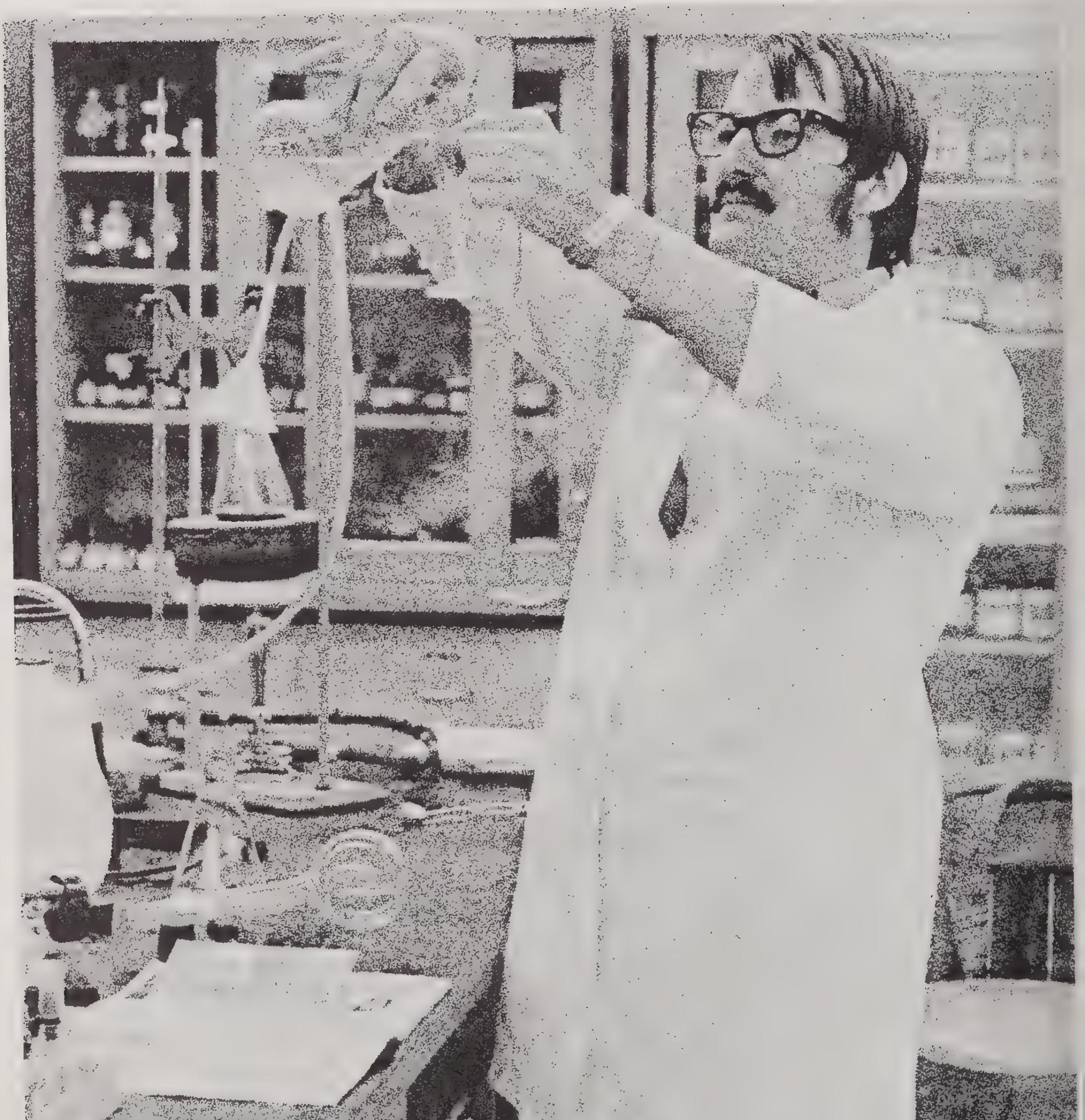
TECHNICAL SECRETARY

			C	L	CH
PSY	112	Personality Development	3	0	3
ECO	102	Economics	3	0	3
BUS	215T	Office Application	6	0	6
ECO	108	Consumer Economics	3	0	3
BUS	116	Business Law	3	0	3
BUS	105S	Typing Office Production	2	3	3

SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

Engineering Technology



AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

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With the increase in the use of air conditioning and refrigeration, there is a great demond for trained personnel to design systems, to install and maintain equipment, and to supervse operations. Most new homes are built with central air conditioning, and many others are having air conditioning added. Transportation systems and food processing industries are requiring greater use of refrigeration for transit, storage and display of products. Virtually every business and industry is utilizing some air conditioning or refrigeration equipment which requires periodic servicng by a skilled mechanic or technician. This curriculum is designed to train each student to meet such needs to the maximum of his interest and ability.

Since the student may make a better choice of goals after gaining more specific knowledge of the subject matter, he is given a course of study with three discrete steps of achievement. A particular option may be selected at any time when the student assesses his own capabilities and goals in view of the requirements of the program and the type of employment opportunities.

Job Descriptions

Mechanic's Option (Diploma): The refrigeration and air conditioning mechanic's skills are developed toward installation, inspection, maintenance, services and repair of domestic and commercial equipment. He is involved with controls, regulating temperatures, and humidity. He installs ducts and piping systems for distribution of air, water, steam, and refrigerants. He will receive 12 months of training, and upon completion he will receive a (trade) mechanic's diploma.

Technician's Option (Advanced Diploma): Students who want to go further are eligible to undertake six months additional training for expanded opportunities and responsibilities. Upon completing these six additional months they will be able to perform some planning, some design, and some organization of maintenance. Sizing of commercial refrigeration units for cooling or freezing is one of the steps to the design function. The student will be able to make residential air conditioning load calculations for year-round air conditioning installations.

Technology Option (Associate in Applied Arts Degree): This curriculum is a 24-month program, designed to prepare the student to assist in planning, installing, operating, and maintaining air conditioning equipment. The required technical information is presented and related skills are developed which will enable the graduate to function efficiently when working with engineers, systems designers, skilled craftsmen, salesmen, and others in the field. Considerable emphasis is placed on self-development in an effort to encourage the graduate to continue to study and grow as the industry advances.

The Associate Degree graduate may be employed in areas of sales, installation, maintenance, production drafting, systems design, or as a research engineering assistant.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		C	L	CH
AHR 1121	Principles of Refrigeration	5	6	7
MAT 1101	Fundamentals of Mathematics	5	0	5
ENG 1101	Reading Improvement	2	0	2
PHY 1101	Applied Science	3	2	4
DFT 1104	Blueprint Reading: Mechanical	0	3°	1
		15	11	19

Second Quarter		C	L	CH
AHR 1122	Domestic and Commercial Refrigeration	3	9	6
MAT 1102	Algebra	5	0	5
ENG 1102	Communication Skills	3	0	3
ELC 1102	Applied Electricity	2	3°	3
DFT 1116	Blueprint Reading: Air Conditioning	1	3°	2
		14	15	19

Third Quarter		C	L	CH
AHR 1123	Principles of Air Conditioning	5	6°	7
AHR 1128	Automatic Controls	3	6	5
PSY 1101	Human Relations	3	0	3
WLD 1101	Basic Gas and Electric Welding	1	3°	2
		12	15	17

Fourth Quarter		C	L	CH
AHR 1130	Duct Layout and Fabrication	2	2	3
AHR 1124	Air Conditioning and Refrigeration Servicing	3	6°	5
AHR 1126	All Year Comfort System	3	6°	5
BUS 1103	Small Business Operations	3	0	3
		11	14	16

FOR THOSE WHO DESIRE ADDITIONAL TRAINING

Graduates of a diploma curriculum in air conditioning and refrigeratio with the recommendation of the department head and the faculty adviso will be permitted to undertake an additional four quarters of technical instruction leading to an associate degree in Air Conditioning and Refrigeration.

SUGGESTED CURRICULUM BY QUARTERS

TECHNICIAN'S OPTION — 18 MONTHS

Fifth Quarter			C	L	CH
AHR	209	Commercial Heat Load Calculations and Commercial Systems Design	5	6	7
DFT	232	AHR Drafting	2	4	3
ENG	102	Composition II	3	0	3
MAT	131	Elementary Technical Mathematics I	3	4	5
			13	14	18

Sixth Quarter			C	L	CH
AHR	228	Air Conditioning Systems & Duct Design	3	6	5
MAT	132	Elementary Technical Mathematics II	3	4	5
ENG	204	Oral Communications	3	0	3
		Social Science Elective	3	0	3
			14	10	18

TECHNOLOGY OPTION — 24 MONTHS

Graduates of the air conditioning and refrigeration Technician's Diploma will be permitted to undertake an additional two quarters of technology courses leading to an associate degree in Air Conditioning and Refrigeration.

Seventh Quarter			C	L	CH
AHR	201	Winter Air Conditioning	3	4	5
PHY	131	Matter and Energy	3	2	4
PSY	206	Applied Psychology	3	0	3
AHR		Elective	3	0	3
			12	6	15

Eighth Quarter			C	L	CH
AHR	230	Seminar Research	2	6	5
PHY	132	Electricity and Magnatism	3	2	4
ENG	103	Report Writing	3	0	3
AHR		Elective	3	0	3
			11	8	15

ELECTIVES

Electives for the *Air Conditioning and Refrigeration Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

			C	L	CH
AHR	217	Circuits and Controls II	3	3	4
AHR	210	Installation and Design Problems	2	6	4
AHR	202	Fuels and Burners	2	3	3

SOCIAL SCIENCE

PSY	213	Advanced Psychology	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
ISC	201	Industrial Organization and Management	3	0	3
SSC	203	Environmental Studies	3	0	3

CHEMICAL TECHNOLOGY

Purpose

Chemical technicians may be thought of as practical laboratory technicians. The program of instruction in this curriculum is designed to educate students in basic chemistry, mathematics and technical communications. Technical knowledge and laboratory techniques are emphasized and a relationship between the theoretical and practical is maintained.

The curriculum objectives are to prepare persons to serve three distinct roles: (1) research assistant to a chemist in the laboratory; (2) planning and production assistant to chemical engineers in converting the research chemist's discoveries into actual industrial production; and (3) quality control technicians. Research laboratory assistants must be well grounded in chemical analysis, testing and synthesis. Chemical planning and production assistants must have command of a basic knowledge of chemical processing and ability to use main types of instruments, equipment and machinery for making chemical products. Quality control technicians should be able to use their basic knowledge to make tests to determine if raw materials and production follow desired specifications.

Job Description

Chemical technicians work for private industries, for the government or in university or hospital research centers. Duties of the chemical technician vary, depending on the organization for whom they work, the area they specialize in, and the projects on which they work. They use their basic knowledge and highly developed laboratory skills to carry our or assist with experiments, tests, and procedures which result from the more abstract work and thinking of chemists and chemical engineers.

They may be employed in analytical laboratories, where they work with complex substances, determining what quantities and combinations of chemical elements and compounds they may contain. They may also be employed in industry to perform tests during large-scale factory production of chemical products. Technicians may perform many of the chemical and mechanical procedures that help the industrial engineer to translate laboratory experiments into factory techniques capable of large quantity production. The chemical technician prepares laboratory test reports, checks analyses with specifications, and consults with laboratory supervisors. This field offers opportunities to women as well as men. The long range outlook for Chemical Technicians is excellent.

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
MAT	101	Technical Math	5	0	5
DFT	101	Technical Drafting	2	4°	3
CHM	111	General Chemistry I	4	3°	5
		Social Science Elective	3	0	3
			17	7	19

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
MAT	102	Technical Math	5	0	5
PHY	101	Properties of Matter	3	2	4
DFT	102	Technical Drafting	2	4°	3
CHM	112	General Chemistry II	4	3°	5
			17	19	20

Third Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
MAT	103	Technical Math	5	0	5
PHY	102	Work Energy and Power	3	2	4
CHM	113	General Chemistry III	4	3	5
CHM	250	Qualitative Analysis	2	4	4
			16	11	21

Fourth Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
CHM	121	Quantitative Analysis I	3	6°	5
CHM	227	Physical Chemistry	3	2	4
PHY	103	Electricity and Magnetism	3	2	4
		Social Science Elective	3	0	3
			15	10	19

Fifth Quarter

			C	L	CH
CHM	222	Quantitative Analysis II	2	9°	5
CHM	231	Organic Chemistry I	3	6°	5
PHY	104	Light and Sound	3	2	4
			8	17	14

Sixth Quarter

			C	L	CH
CHM	232	Organic Chemistry II	3	6	5
CHM	241	Industrial Chem. Analysis I	3	9°	6
			6	15	11

Seventh Quarter

			CL	L	CH
CHM	233	Organic Chemistry III	3	6	5
CHM	242	Industrial Chem. Analysis II	3	12	7
		Elective	3	2	4
			9	20	16
		Total			120

ELECTIVES

Electives for the *Chemical Technology Curriculum* may be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

TECHNICAL

MEC	116	Engineering Materials	3	0	3
MAT	201	Technical Mathematics	5	0	5
MAT	219	Differential Equations	5	0	5
PHY	231	Fluid Mechanics	3	0	3
CHM	252	Chemistry of Living Systems	3	2	4

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
ISC	201	Industrial Organization and Management	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

DRAFTING & DESIGN TECHNOLOGY

Purpose

This curriculum guide was prepared for the purpose of outlining a training program for students of mechanical drafting and design technology. There are certain identifiable duties which are common to all technicians of this general classification and which comprise the basic areas of technical knowledge they need. This curriculum has been designed for training persons in the accepted performance of these basic duties that will be assigned, and to enable the individual student to become proficient in a short time after he becomes employed in the industry.

Courses in general education have been included to give a student the assurance and understanding that comes with education upon a broad base. The technician associates with many levels of thought and expression — administrative personnel, scientists, engineers, skilled workmen — and must be able to communicate effectively with all levels. Courses containing essential information from related subject areas, such as mathematics, physics, and mechanics have been included in order to provide the student a better academic base for his training. Emphasis is placed upon ability to think and plan, as well as drafting procedures and techniques.

Job Description

Mechanical drafting and design technicians are concerned with the preparation of drawings for design proposals, for experimental models and items for production use.

These technicians perform many aspects of drafting in a specialized field, such as the developing of the drawing of a section, sub-assembly or major component. Investigating design factors and availability of material and equipment, production methods and facilities are frequent assignments. They assist in the design of units and controls from specifications by utilizing drawings of existing units and reports on functional performance. They may draw components in industrial fields based on engineers original design concepts or specific ideas. Also, they may be assigned as coordinators for the execution of related work of other design, production, tooling, material and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings.

These technicians are employed in many types of manufacturing, fabrication, research development and service industries. Substantial numbers also are employed in communications, transportation, public utilities, consulting engineering firms, and federal, state, and local governments.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
CHM	111	General Chemistry	4	3	5
ENG	101	Composition I	3	0	3
DFT	101	Technical Drafting	2	4	3
MAT	101	Technical Mathematics	5	0	5
MEC	101	Machine Processes	0	6	2
			14	13	18

Second Quarter

			C	*L*	*CH*
ENG	102	Composition II	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
MAT	102	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
			15	6	18

Third Quarter

			C	*L*	*CH*
MEC	102	Machine Processes	0	6°	2
ENG	204	Oral Communication	3	0	3
DFT	102	Technical Drafting	2	4	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Work, Energy & Power	3	2	4
			13	12	17

Fourth Quarter

			C	*L*	*CH*
PHY	104	Light & Sound	3	2	4
ENG	103	Report Writing	2	2	3
DFT	103	Technical Drafting	1	6	3
PHY	106	Applied Mechanics	5	0	5
MEC	210	Physical Metallurgy	3	3	4
			14	13	19

Fifth Quarter

			C	*L*	*CH*
DFT	201	Technical Drafting	2	6	4
DFT	204	Descriptive Geometry	2	4	4
MEC	205	Strength of Materials	3	2	4
MEC	211	Physical Metallurgy	3	3	4
			10	15	16

Sixth Quarter			*C*	*L*	*CH*
DFT	205	Design Drafting I	2	6	4
DFT	211	Mechanisms	3	2	4
		Social Science Elective	3	0	3
EDP	103	Introduction to Computer Concepts	4	0	4
			12	8	15

Seventh Quarter			*C*	*L*	*CH*
DFT	206	Design Drafting II	2	6	4
MEC	235	Hydraulics & Pneumatics	3	3	4
		Technical Elective	0	0	4
		Technical Elective	0	0	4
		Social Science Elective	3	0	3
			8	9	19
		Total			122

ELECTIVES

Electives for the *Drafting & Design Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

			C	*L*	*Cr*
DFT	212	Jig and Fixture Design	2	6	4
MEC	237	Control Systems	2	4	4
ISC	201	Industrial Organization and Management	3	0	3
DES	240	Senior Project	2	6	4

SOCIAL SCIENCE

SSC	203	Environmental Studies	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3

ELECTRONICS ENGINEERING TECHNOLOGY

Purpose

The field of electronics has developed at a rapid pace since the turn of the century. For many years the major concern of electronics was in the area of communications. Developments during World War II and in the period since have revolutionized production techniques. New industries have been established to supplement the need and demand for electronics equipment.

Many opportunities exist for men and women with a technical education in electronics. This curriculum provides a basic background in electronic related theory with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may take their place as an assistant to an engineer, or as a liaison between the engineer and the skilled craftsman.

Job Description

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance or sales. He may be an assistant to an engineer, an engineering aide, laboratory technician, supervisor or equipment specialist. His training is similar to that of an engineer, but in less depth and more practical in application. He can function as a liaison between an engineer and the skilled craftsman.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
EDP	104	Introduction to Electronic Data Processing Systems	3	2	4
MAT	101	Technical Mathematics	5	0	5
MEC	101	Machine Processes	0	6°	2
			15	12	20

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
CHM	111	General Chemistry	4	3°	5
DFT	101	Technical Drafting	2	4°	3
MAT	102	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
			17	9	20

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
ELC	102	Fundamentals of Electricity	4	6°	6
DFT	102	Technical Drafting	2	4°	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Work, Energy & Power	3	2	4
			17	12	21

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
ELN	101	Electronic Instruments and Measurements	1	6°	3
ELN	105	Control Devices	5	6°	7
MAT	201	Technical Mathematics	5	0	5
			13	14	18

Fifth Quarter

			C	L	CH
ELN	205	Applications of Vacuum Tubes and Transistors	5	6°	7
ELN	214	Wave Shaping & Pulse Circuits	2	3°	3
PHY	104	Light & Sound	3	2	4
ELN	210	Semiconductor Circuit Analysis	5	3°	6
			15	14	20

Sixth Quarter

			C	L	CH
ELN	215	Wave Shaping & Pulse Circuits	2	3°	3
ELN	208	Solid State & Thin Film Devices	5	2	6
		Social Science Elective	3	0	3
		Technical Elective	6	0	6
			16	5	18

Seventh Quarter

			C	L	CH
ELN	245	Electronic Design Project	0	4	2
ELN	227	UHF & Microwave Systems	5	4	7
ELN	240	Digital Computers	3	0	3
		Social Science Elective	3	0	3
		Technical Elective	5	0	5
			16	8	20
		Total			137

ELECTIVES

Electives for the *Electronics Technology Curriculum* may be selected from the following courses. The school will determine which of those are to be offered in any given quarter of the program.

TECHNICAL

			C	L	CH
ELN	220	Electronic Systems	5	6	7
ELN	230	Television Systems	4	6	7
MAT	208	Calculus & Laplace Transform for Electronics	5	0	5
MAT	214	Statistics	5	0	5

MAT	230	Boolean Algebra with Computer Applications	5	0	5

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

INDUSTRIAL ENGINEERING TECHNOLOGY

Purpose

The Industrial Engineering Technician is trained in the planning, functioning and controlling of the operation of an industrial enterprise for its profitable and continued operation.

New firms moving into North Carolina and established firms expanding their facilities in recent years have created increased demands for personnel at all levels of production.

Of particular significance as determined by the Employment Security Commission of North Carolina is the need for over 2000 technicians trained in Industrial Engineering, Quality Control and Production Planning.

A graduate of the Industrial Engineering Technology curriculum should have a basic knowledge of engineering at the technology level with specific skills in performing industrial engineering functions.

This, with the probable in-plant training of a particular company, should make the graduate a valuable employee in any one of the several thousand firms in North Carolina alone.

Job Description

The Industrial Engineering Technician studies and records time, motion, methods, and speed involved in performance of maintenance, production, clerical, and other worker operations to establish standard production rate and to improve efficiency. Prepares charts, graphs, and diagrams to illustrate work flow, routing, floor layouts, material handling, and machine utilization. Observes workers operating equipment or performing tasks to determine time involved and fatigue rate, using stop watch, motion-picture camera, electrical recorder, and similar equipment. Recommends revision of methods of operation or material handling, alterations in equipment layout or other changes to increase production or improve standards. Aids in planning work assignments in accordance with worker performance, machine capacity, production schedules, and anticipated delays. May be designated according to type of studies analyzed as Methods-Study Analyst; Motion-Study Analyst; Time-Study Analyst 1.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
DFT	101	Technical Drafting	2	4	3

MAT	101	Technical Math	5	0	5
PSY	206	Applied Psychology	3	0	3
ISC	102	Industrial Safety	3	0	3
			16	4	17

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
DFT	102	Technical Drafting	2	4	3
MAT	102	Technical Math	5	0	5
PHY	101	Property of Matter	3	2	4
MEC	111	Manufacturing Processes	3	3	4
			14	11	19

Third Quarter

			C	L	CH
ENG	103	Report Writing	3	0	3
PHY	102	Work, Energy, Power	3	2	4
MEC	112	Manufacturing Processes	3	3	4
ISC	120	Prin. of Ind. Management	3	2	4
ECO	102	Economics	3	0	3
			15	7	18

Fourth Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	239	Marketing	5	0	5
ISC	210	Job Analysis and Evaluation	3	2	4
BUS	123	Business Finance I	3	0	3
ELC	101	Basic Electricity	4	6	6
			18	8	21

Fifth Quarter

			C	L	CH
EDP	103	Intro. to Computer Concepts	4	0	4
ISC	202	Quality Control	3	2	4
ISC	211	Work Measurement	3	2	4
ISC	230	Materials Handling I	3	2	4
		Elective	3	0	3
			16	6	19

Sixth Quarter

			C	L	CH
BUS	272	Supervision	3	0	3
ISC	204	Value Analysis	3	0	3
ISC	231	Materials Handling II	1	6	4
		Elective	3	0	3
		Elective	3	0	3
			13	6	16
		Total			110

ELECTIVES

			C	L	CH
MEC	217	Management Problems	3	0	3
BUS	140	Engineering Materials Processes	3	3	4
ECO	201	Industrial Accounting	3	2	4
SSC	205	Labor Econ. and Labor Relations	3	2	4
POL	201	American Institutions	3	0	3
PSY	213	U. S. Government	3	0	3
SSC	203	Advanced Psychology	3	0	3
ISC	220	Environmental Studies	3	0	3

FIRE SCIENCE

Purpose

The rapidly developing age of scientific developments changes the ways of man and continually brings about a need for further changes. The Public Fire Service is no exception. New chemicals that are volatile, pyrophonic, radioactive, and explosive are being transported and stored in every section of North Carolina.

Space Age Fire Service requires intelligent, courageous, and dedicated men. They must be willing to keep pace with the rapid technical changes and be able to cope with new problems that confront them. This is necessary not only to save the lives of others but also their own.

Rising cost and the increased demands on governmental budgets requires more efficient use of available funds, equipment, and manpower. The curriculum is designed to enable the individual to draw from a vast store of technical and professional knowledge to make decisions effectively both on and off the emergency scene. In this manner he may assist the economic life of the community through improved services to the public.

Through technical education, the individual requires specialized knowledge of this vital field of public service and develops specific competencies for the performance of fire service administrative and supervisory duties. The curriculum includes areas such as the scientific understanding of fire hazards and their control and general courses that prepare him to work harmoniously with people.

Job Description

The opportunities are excellent for the individual with adequate training and ability. Students seeking gainful employment may be hired by government agencies, industrial firms, educational organizations, and insurance rating organizations.

Employed persons should have opportunities for positions requiring increased skill and responsibility as they increase their job competence.

Developing fire fighting practice skills is not within the scope of this curriculum. These skills may be readily developed within the local fire department and from Fire Service Training courses available. An individual just entering the Fire Service Field may start as a firefighter at which time he will gain or improve his firefighting skills and an in-depth knowledge of specific equipment. With demonstrative abilities individuals may find positions as a fire department officer, and instructor, or supervisor in an industrial plant.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
ENG	101	Composition	3	0	3
BUS	272	Principles of Supervision	3	0	3
MAT	101	Technical Mathematics	5	0	5
FIP	115	Fire Prevention Programs	3	0	3
FIP	101	Introduction to Fire Protection Hazards	3	0	3
			17	0	17

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
PSY	206	Applied General Psychology	3	0	3
PHY	101	Properties of Matter	3	2	4
FIP	211	Grading of Fire Defenses	3	0	3
FIP	102	Municipal Fire Protection	3	0	3
			15	2	16

Third Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
FIP	105	Applied Electricity for Fire Protection	3	2	4
DFT	118	Drafting and Blueprint Interpretation	0	6	2
FIP	120	Municipal Finance	5	0	5
FIP	135	Training Programs and Methods of Instruction	3	0	3
			13	7	17

Fourth Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
CHM	101	Chemistry	4	2	5
FIP	201	Fire Detection and Investigation	3	0	3
FIP	230	Hydraulics and Water Distribution Systems	3	2	4
FIP	103	Construction Codes and Material Rating	2	2	3
			15	6	18

Fifth Quarter

			C	L	CH
FIP	220	Fire Fighting Strategy	3	2	4
FIP	218	Chemistry of Hazardous Material	3	2	4
FIP	231	Sprinkler and Standpipe Systems	3	2	4
FIP	208	Municipal Public Relations	3	0	3
		Technical Elective	3	0	3
		Social Science Elective	3	0	3
			18	6	21

Sixth Quarter

			C	*L*	*CH*
FIP	235	Inspection Principles and Practices	3	4	5
FIP	245	Automatic Alarm and Extinguishing System	3	2	4
BUS	233	Personnel Management	3	0	3
FIP	225	Fire Protection Law	3	0	3
		Social Science Elective	3	0	3
			15	6	18
		Total			107

ELECTIVES

Electives for the *Fire Science Technology Curriculum* may be selected from the following courses. The school will determine which of those are to be offered in any given quarter of the program.

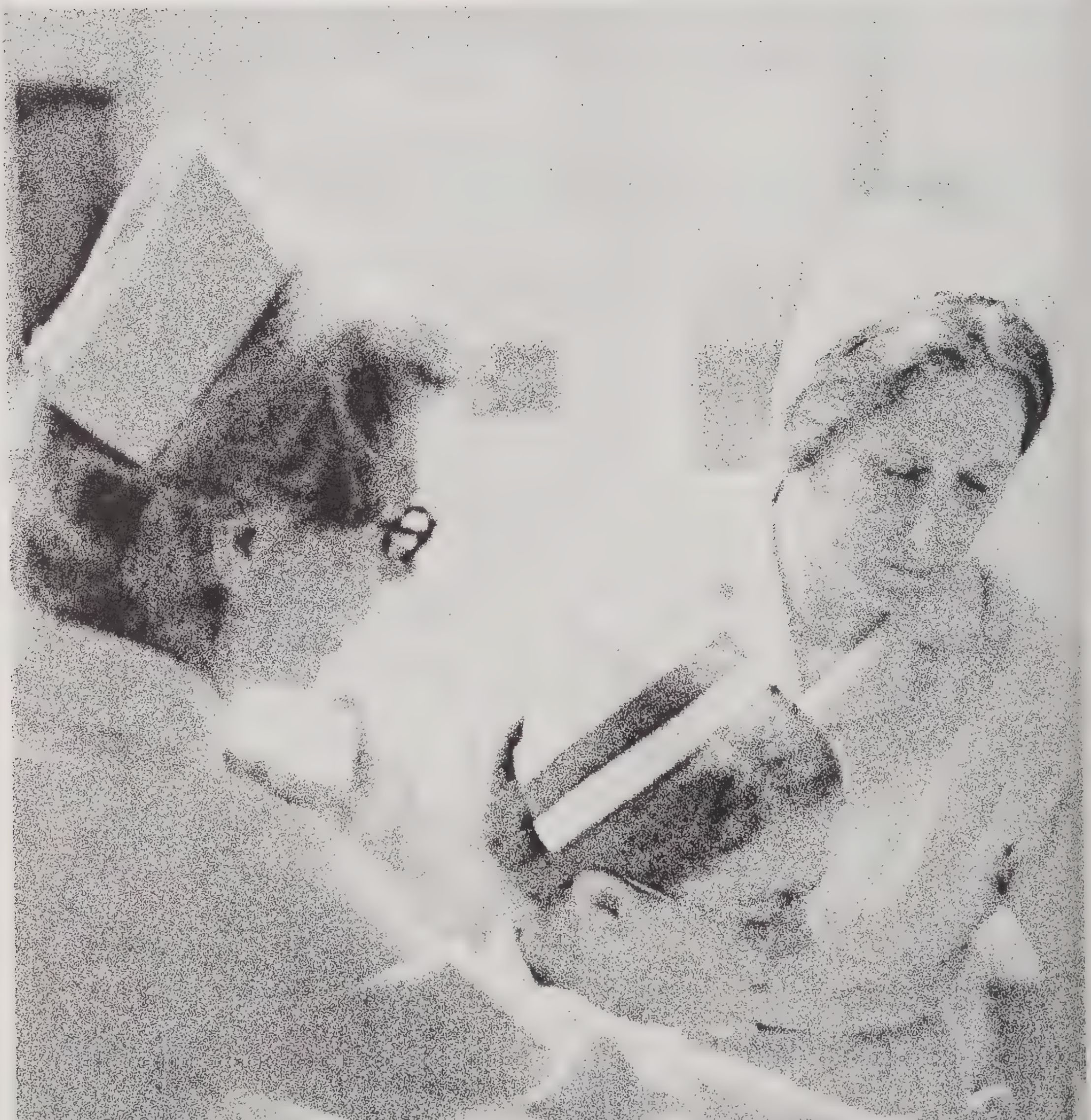
TECHNICAL

FIP	205	Industrial Hazards	3	2	4
FIP	240	Multiple Line Insurance and Rating Schedules	4	0	4
FIP	216	Chemical & Radiation Hazards	3	2	0
FIP	226	Industrial Safety	3	0	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3

Human Services



DENTAL ASSISTING

Purpose

Dental assisting is one of the fastest growing occupations for women today. The role of the dental assistant has evolved from that of receptionist only to that of a fully participating member of the dental team; primary emphasis is on chairside assisting, although she continues to perform numerous duties related to office management, patient relations, and laboratory procedures. The dental profession now recognizes the contribution the dental assistant can make to the extension of services and increased productivity of the dental office. Projected needs call for a fivefold expansion in numbers of graduates and continued improvement in the quality of training programs.

The specific objectives of the Dental Assisting Curriculum are to develop the following competencies:

1. Understanding of the business procedures of the dental office.
2. Understanding of principles and beginning skill in the procedures of chairside assisting, including effective patient relationships.
3. Understanding of principles and beginning skills in performance of selected laboratory procedures commonly carried out in the dental office.

Job Description

The duties of the dental assistant vary somewhat, depending on the number of auxiliary workers employed. In some offices the assistant is responsible for all three areas described below; in others, she may be responsible for only one area.

In rendering chairside assistance to the dentist, the dental assistant is responsible for placing instruments for use, keeping the operating field clear during treatment, preparing restorative materials and dental cements, passing materials and instruments during dental procedures, and care of the operatory after use. She may take X-rays of the teeth and apply fluorides under the direction of the dentist. In the laboratory of the dental office, she may make models of the teeth and mouth, cast inlays and crowns, process exposed X-ray films and mount finished X-rays. In acting as office manager and receptionist, she receives patients, arranges appointments, records treatment, keeps accounts, maintains inventories, and orders supplies.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		C	L	CH
DEN 1001	Introduction to Dental Assisting	2	0	2
DEN 1002	Dental Materials	1	9	5
DEN 1003	Preclinical Sciences I	3	3	4
ENG 1102	Communication Skills	3	0	3
PSY 1112	Personality Development	3	0	3
		12	12	17

Second Quarter

		C	L	CH
DEN 1004	Preclinical Sciences II	3	0	3
DEN 1005	Dental Office Management I	3	2	4
DEN 1006	Clinical Procedures I	3	6	5
DEN 1012	Dental Roentgenology	2	6	4
		11	14	16

Third Quarter

		C	L	CH
DEN 1013	Oral Health Education	1	2	2
DEN 1007	Clinical Procedures II	4	6	6
DEN 1008	Dental Office Management II	3	0	3
DEN 1009	Dental Office Practice I	0	12	4
BUS 1102	Typewriting	2	3	3
		10	23	18

Fourth Quarter

		C	L	CH
DEN 1010	Dental Office Practice II	0	27	9
ENG 1105	Written Communications	3	0	3
		3	27	12

PRACTICAL NURSING

Purpose

The accelerated growth in North Carolina and rapid advancement in medical technology demands well-trained, capable personnel for health service positions.

The aim of this program is to make available the opportunity for the interested male and female to prepare themselves for participation in the care of patients of all ages, in various states of dependency, and with a variety of health conditions.

Students are selected on the basis of interest in and aptitude for nursing, as determined by pre-entrance test, high school records, personal interviews, health reports, and character references.

Job Description

The Practical Nurse Education program is taught in a 4-quarter period of classroom instruction and supervised nursing practice.

Following a period of classroom instruction in fundamentals of nursing, and principles from the sciences, the student practices nursing skills under faculty supervision in the hospital areas. The student advances in her studies, and in the nursing care of patients of all ages through planned assignments in medical-surgical nursing, care of the mother and newborn infant, and the care of the sick child. Other learning opportunities are planned in community facilities.

Other learning opportunities are planned in offices of local physicians and a public health clinic.

The graduate practical nurse is eligible to take, and must pass, the North Carolina Board of Nursing Licensing examination for practical nurses in order to practice in North Carolina.

The LPN is qualified and prepared to function in a variety of situations: hospitals, nursing homes, clinics, doctors' offices, private duty nursing, and in public health programs. In all situations the LPN functions under the supervision of a registered nurse and/or a licensed physician.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		*C*	*L*	*CL*	*CH*
PNE 1001	Fundamentals of Health	2	0	0	2
PNE 1002	Basic Science	6	4	0	8
PNE 1003	Fundamentals of Practical Nursing	4	8	0	8
PSY 1101	Human Relations	3	0	0	3
		15	12	0	21

Second Quarter		*C*	*L*	*CL*	*CH*
PNE 1013	Mental Health	3	0	0	3
°PNE 1006	Maternity Nursing	2	2	0	3
PNE 1005	Fundamentals of Medical-Surgical Nursing I	2	2	0	3
PNE 1004	Clinical Nursing Experience I	0	0	21	7
		7	4	21	16

Third Quarter		*C*	*L*	*CL*	*CH*
°PNE 1007	Nursing of Children	2	2	0	3
PNE 1009	Medical-Surgical Nursing II	4	2	0	5
PNE 1008	Clinical Nursing Experience II	0	0	21	7
		6	4	21	15

Fourth Quarter		*C*	*L*	*CL*	*CH*
PNE 1012	Advanced Medical-Surgical Nursing III	4	0	0	4
PNE 1014	Vocational Adjustments	2	2	0	3
PNE 1011	Clinical Nursing Experience III	0	0	21	7
		6	2	21	14

* A portion of the class may be scheduled to take these courses during another quarter.

CHILD CARE

Description

Child Care will provide training in the care and guidance of the preschool child. Graduates will be knowledgeable of the concepts of growth and development and the physical and emotional needs of young children. They will have skills in planning and implementing creative activities, a music and art program, and the development of language and communication skills for young children.

Graduates will also have training in the administration and supervision of day care programs and working with parents and community agencies to meet the individual needs of young children.

Employment may be found in day care centers, nurseries, kindergartens, institutions providing care to children with special needs, pediatric wards, schools, recreation centers and camps.

The curriculum is designed on a twelve-month schedule. Students successfully completing the program will be awarded a Diploma in Child Care.

SUGGESTED CURRICULUM BY QUARTERS

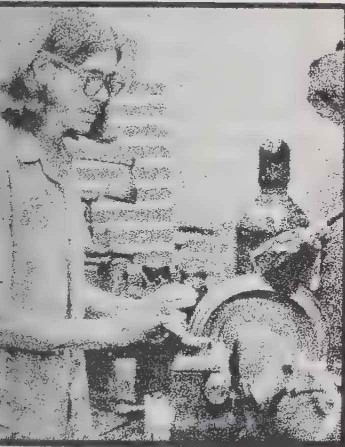
First Quarter		*C*	*L*	*CH*
EDU 1130	Day Care for Young Children	2	3°	4
EDU 1132	Health and Nutrition	4	3°	5
EDU 1101	Activities for Young Children	3	3°	4
EDU 1135	Human Growth and Development	5	3°	6
		14	11	19

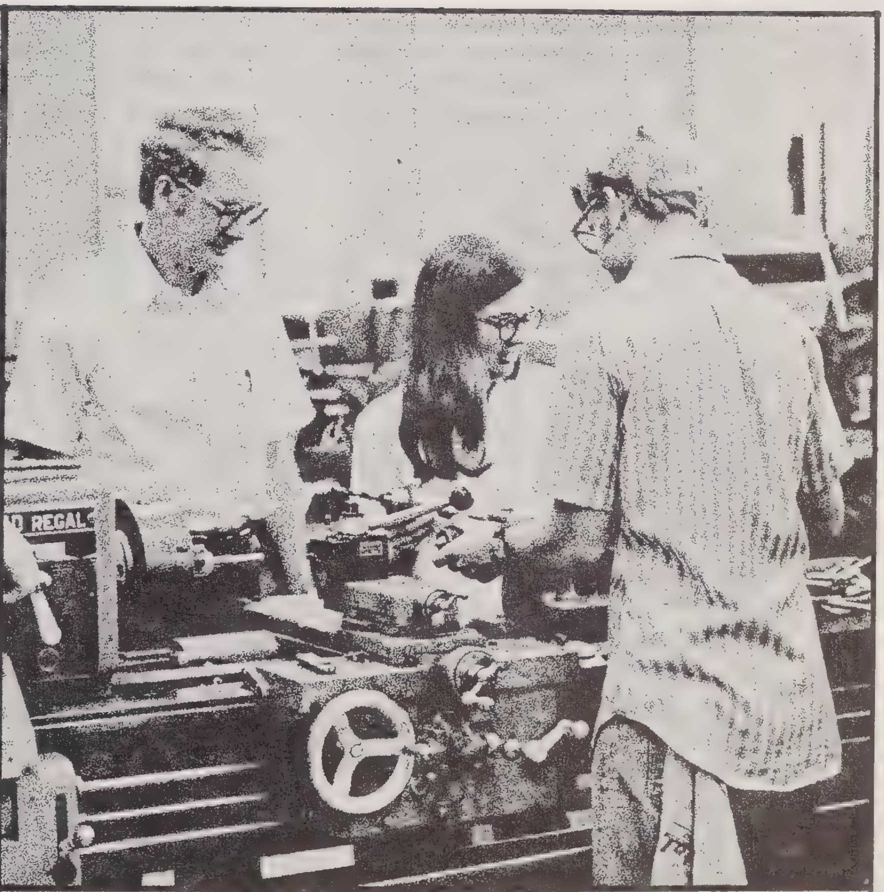
Second Quarter		*C*	*L*	*CH*
EDU 1140	Working with the Young Child	5	3-9°	6-8
EDU 1120	Communicating Effectively with the Young Child	3	0	3
EDU 1103	Music inthe Early Childhood Program	3	3°	4
EDU 1105	Science inthe Early Childhood Program	3	3°	4
		14	15	17-19

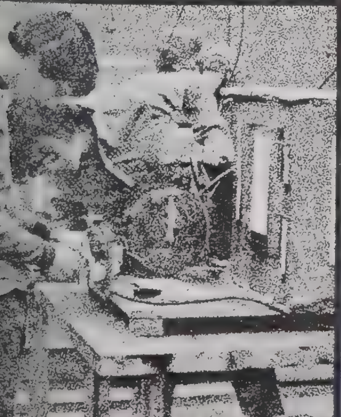
Third Quarter		*C*	*L*	*CH*
EDU 1145	Working with the Young Child with Problems	5	3-9°	6-8
EDU 1123	Conceptual and Language Development	3	0	3
EDU 1148	Group Care of Infants	3	6	5
EDU 1108	Art in the Early Childhood Program	3	2	4
		14	17	18-20

Fourth Quarter		*C*	*L*	*CH*
EDU 1149	Adm. & Supv. in Pre-School Facility	3	2	4
EDU 1150	Seminar-Practicum in Early Childhood Education	4	6-15°	6-9
EDU 1125	Parent Education	3	0	3
EDU 1110	Literature in the Early Childhood Program	3	0	3
		13	17	16-19

Mechanical Occupations




REGAL



AIR CONDITIONING AND REFRIGERATION MECHANICS

Purpose

With the increase in the use of air conditioning and refrigeration, there is a great demand for trained personnel to design systems, to install and maintain equipment, and to supervise operations. Most new homes are built with central air conditioning, and many others are having air conditioning added. Transportation systems and food processing industries are requiring greater use of refrigeration for transit, storage and display of products. Virtually every business and industry is utilizing some air conditioning or refrigeration equipment which requires periodic servicing by a skilled mechanic or technician. This curriculum is designed to train each student to meet such needs to the maximum of his interest and ability.

Since the student may make a better choice of goals after gaining more specific knowledge of the subject matter, he is given a course of study with three discrete steps of achievement. A particular option may be selected at any time when the student assesses his own capabilities and goals in view of the requirements of the program and the type of employment opportunities.

Job Descriptions

Mechanic's Option (Diploma): The refrigeration and air conditioning mechanic's skills are developed toward installation, inspection, maintenance, services and repair of domestic and commercial equipment. He is involved with controls, regulating temperatures, and humidity. He installs ducts and piping systems for distribution of air, water, steam, and refrigerants. He will receive 12 months of training, and upon completion he will receive a (trade) mechanic's diploma.

Technician's Option (Advanced Diploma): Students who want to go further are eligible to undertake six months additional training for expanded opportunities and responsibilities. Upon completing these six additional months they will be able to perform some planning, some design, and some organization of maintenance. Sizing of commercial refrigeration units for cooling or freezing is one of the steps to the design function. The student will be able to make residential air conditioning load calculations for year-round air conditioning installations.

* Note: Please refer to page 80 for specific curriculum.

AUTOMOTIVE MECHANICS

Purpose

This curriculum provides a training program for developing the basic knowledge and skills needed to inspect, diagnose, repair or adjust automotive vehicles. Manual skills are developed in practical shop work. Thorough understanding of the operating principles involved in the modern automobile comes in class assignments, discussion, and shop practice.

This curriculum provides a basis for the student to compare and adapt to new techniques for servicing and repair as vehicles are changed year by year.

Job Description

Automobile mechanics maintain and repair mechanical, electrical, and body parts of passenger cars, trucks, and buses. In some communities and rural areas they also may service tractors or marine engines and other gasoline-powered equipment. Mechanics inspect and test to determine the causes of faulty operation. They repair or replace defective parts to restore the vehicle or machine to proper operating condition. They use shop manuals and other technical publications.

Automotive mechanics in smaller shops usually are general mechanics qualified to perform a variety of repair pobs.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		*C*	*L*	*CH*
PME 1101	Internal Combustion Engineers	3	12°	7
MAT 1101	Fundamentals of Mathematics	5	0	5
ENG 1101	Reading Improvement	2	0	2
PHY 1101	Applied Science	3	2	4
		13	14	18

Second Quarter		*C*	*L*	*CH*
PME 1102	Automotive Fuel and Electrical Systems	5	12°	9
ENG 1102	Communications Skills	3	0	3
DFT 1101	Schematics and Diagrams: Power Mechanics	0	3°	1
PHY 1102	Applied Science	3	2	4
		11	17	17

Third Quarter

		C	L	CH
AUT 1123	Automotive Chassis, Suspension and Braking System	3	8°	6
PME 1103	Engine Ignition System	3	3	4
PSY 1101	Human Relations	3	0	3
AHR 1101	Automotive Air Conditioning	2	3°	3
WLD 1101	Basic Gas and Electric Welding	1	3	2
		12	17	18

Fourth Quarter

		C	L	CH
AUT 1124	Automotive Power Train Systems	3	9°	6
AUT 1125	Automotive Servicing	3	9°	6
BUS 1103	Small Business Operations	3	0	3
		9	18	15

ADVANCED AUTOMOTIVE MECHANICS

Purpose

This curriculum is a continuation of the basic Automotive Mechanics program in which the student was made familiar with basic automotive principles. This program gives further study and experience in the specialized fields of automotive electrical systems, fuel systems and the automatic transmission.

Classroom discussion, demonstrations, and shop practice give the student a working knowledge of these complex systems of the modern automobile.

This curriculum is designed for the student who is a graduate of a secondary school auto mechanics program (minimum 6 units), a graduate of the Technical Institute of Alamance Auto Mechanics Diploma Program, or a graduate of an equivalent training program in auto mechanics.

Job Description

The auto mechanic today is frequently required to be a specialist. Expert knowledge and skill is necessary to service and maintain the increasingly more complicated automobile. Many dealers and shops prefer to hire several mechanics who each specialize in different areas, such as automatic transmissions or electrical systems. The specialist can be more efficient in diagnosing problems and making repairs. With both a general background plus specialized training, this graduate should fill an expressed need for technical automotive repair.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		*C*	*L*	*CH*
PME 1240	Advanced Automotive Electrical Systems I	5	15°	10
MAT 1101	†Fundamentals of Mathematics	5	0	5
ENG 1101	†Reading Improvement	2	0	2
		12	15	17

Second Quarter		*C*	*L*	*CH*
PME 1250	Advanced Auto Fuel System	5	12°	9
PHY 1101	†Applied Science	3	2	4
ENG 1102	†Communication Skills	3	0	3
DFT 1101	†Schematics and Diagrams: Power Mechanics	0	3°	1
		11	17	17

Third Quarter

			C	L	CH
AUT	1223	Automotive Transmissions	5	12°	9
PHY	1102	†Applied Science	3	2	4
PSY	1101	†Human Relations	3	0	3
WLD	1101	†Basic Gas and Electric Welding	1	3°	2
			12	17	18

Fourth Quarter

			C	L	CH
AUT	1224	Advanced Automatic Transmissions	5	12°	9
BUS	1103	†Small Business Operation	3	0	3
AUT	1101	Automotive Air Conditioning	2	3	3
			15	15	15

†Subject to be waived by post-secondary transcript or proficiency testing by department head.

ELECTIVES

			C	L	CH
MEC	1113	Machine Shop Processes	2	3	3
MEC	101	Machine Processes	0	6	2
MEC	1115	Treatment of Ferrous Metals	2	3	3
MEC	1116	Treatment of Non-Ferrous Metals	2	3	3
ENG	1103	Report Writing	3	0	3
ENG	101	Composition	3	0	3
ENG	204	Oral Communication	3	0	3
PSY	206	Applied Psychology	3	0	3
POL	201	American Government	3	0	3
AHR	101	Fundamentals of Refrigeration I	4	3	5
AHR	102	Fundamentals of Refrigeration II	3	6	5
AHR	1121	Principles of Refrigeration	5	6	7
MAT	101	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
BUS	101	Introduction of Business	5	0	5
BUS	232	Sales Development	3	0	3
ECO	102	Economics	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6

MACHINIST TRADE

Purpose

This curriculum was prepared to meet a definite need for training of machinists. Surveys recently completed in North Carolina show that many of the existing industries lack time and facilities for training enough machinists to meet present and planned needs. Expanding industries already located in our State and new industries under development invariably express the need for skilled craftsmen who have the background knowledge and potential to advance.

This guide is designed to give learners the opportunity to acquire basic skills and the related technical information necessary to gain employment and build a profitable career in the machine shop industry in the State. It is comprised of the joint views of committees responsible for its development.

Job Description

The machinist is a skilled metal worker who shapes metal parts by using machine tools and hand tools. His training and experience enable him to plan and carry through all the operations needed in turning out a machined product and to switch readily from one kind of product to another. A machinist is able to select the proper tools and material required for each job and to plan the cutting and finishing operations in their proper order so that he can complete the finished work according to blueprint or written specifications. He makes standard shop computations relating to dimensions of work, tooling, feeds, and speeds of machining. He often uses precision measuring instruments such as micrometers and gages to measure the accuracy of his work to thousandths of an inch.

This skilled worker must be able to set up and operate most types of machine tools. The machinist also must know the composition of metals so that he can heat and quench cutting tools and parts to improve machinability. His wide knowledge enables him to turn a block of metal into an intricate, precise part.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		C	L	CH
MEC 1101	Machine Shop Theory and Practice	3	10°	6
MAT 1101	Fundamentals of Mathematics	5	0	5
DFT 1104	Blueprint Reading: Mechanical	0	3°	1
ENG 1101	Reading Improvement	2	0	2
PHY 1101	Applied Science	3	2	4
		13	15	18

Second Quarter		C	L	CH
MEC 1102	Machine Shop Theory and Practice	3	10°	6
MAT 1103	Geometry	3	0	3
DFT 1105	Blueprint Reading: Mechanical	0	3°	1
PHY 1102	Applied Science	3	2	4
ENG 1102	Communication Skills	3	0	3
		12	15	17

Third Quarter		C	L	CH
MEC 1103	Machine Shop Theory and Practice	3	10°	6
MEC 1115	Treatment of Ferrous Metals	2	3°	3
DFT 1106	Blueprint Reading: Mechanical	0	3°	1
MAT 1104	Trigonometry	3	0	3
PSY 1101	Human Relations	3	0	3
		11	16	16

Fourth Quarter		C	L	CH
MEC 1104	Machine Shop Theory and Practice	3	10°	6
MEC 1116	Treatment of Non-Ferrous Metals	2	3°	3
WLD 1101	Basic Gas and Electric Welding	1	3°	2
MAT 1123	Machinist Mathematics	3	0	3
BUS 1105	Industrial Organizations	3	0	3
		12	16	17

ADVANCED MACHINIST

Purpose

The Advanced Machinist Curriculum is a continuation of the basic Machinist Trades Program. It is designed to help the student acquire more refined skills and more understanding in those areas of metal working needed by industry and smaller shops located in this region. Because of this greater proficiency and broader knowledge, the graduate of this advanced program should be able to take advantage of more employment opportunities and would have a greater potential for job satisfaction.

Applicant should have completed a one year (12 month) machinist program or should be able to demonstrate that they have acquired equivalent proficiency.

Job Description

The machinist is a skilled metal worker who shapes metal parts by using machine tools and hand tools. His training and experience enable him to plan and carry through all the operations needed in turning out a machined product and to switch readily from one kind of product to another. A machinist is able to select the proper tools and material required for each job and to plan the cutting and finishing operations in their proper order so that he can complete the finished work according to blueprint or written specifications. He makes standard shop computations relating to dimensions of work, tooling, feeds, and speeds of machining. He often uses precision measuring instruments such as micrometers and gages to measure the accuracy of his work to thousandths of an inch.

This skilled worker must be able to set up and operate most types of machine tools. The machinist also must know the composition of metals so that he can heat and quench cutting tools and parts to improve machinability. His wide knowledge enables him to turn a block of metal into an intricate, precise part.

PREREQUISITE: A student must have completed at least four quarters of the machinist trade program as a prerequisite for admission of a candidate to the Advanced Machinist diploma program.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		C	*L*	*CH*
MEC 1126	Heat Treating Practice	1	3°	2
DFT 1220	Shop Sketching	0	3°	1
MEC 1501	Precision Machining	0	9°	3
MEC 1515	Manufacturing Processing	4	0	4
MEC 1540	Machine Repair	2	6°	4
		7	21	14

Second Quarter

		C	*L*	*CH*
MEC 1502	Jig, Fixture and Die Making	2	9°	5
DFT 1221	Machinist Drafting I	0	4	2
MEC 1505	Mechanisms	2	3°	3
MEC 1516	Strength of Materials	2	2	3
MEC 1541	Machine Repair II	0	3°	1
		6	21	14

Third Quarter

		C	*L*	*CH*
MEC 1504	Model Making	2	8°	5
DFT 1222	Machinist Drafting II	0	4	2
MEC 1054	Gage and Template	1	5°	3
ENG 1115	Technical Communications	3	0	3
MEC 1508	Cutter Grinding	1	2°	2
MEC 1542	Machine Repair III	0	3°	1
		7	22	16

Fourth Quarter

		C	*L*	*CH*
MEC 1560	Automatic and Semi-automatic Machinery	3	3°	4
MEC 1700	Design and Manufacturing	4	12*	10
MEC 1543	Machine Repair IV	0	3*	1
		7	18	15

MECHANICAL DRAFTING

Purpose

This curriculum is designed to prepare students to enter the field of mechanical drafting. The first two quarters contain courses basic to all fields of drafting. The third and fourth quarters contain specialization and related courses that prepare one to enter mechanical drafting occupations.

Each course is prepared to enable an individual to advance rapidly in drafting proficiency upon entering the field of work. Courses are arranged in sequence to develop drafting skills and proficiency in mathematics and science. The draftsman associates with many levels of personnel — administrative, architects, engineers, skilled workmen — and must be able to communicate effectively with them. Courses to develop knowledge and skills in communication, human relations, economics and industrial organization are provided to assist the student in developing understanding and confidence in his relations with other persons.

Job Description

Draftsman prepares clear, complete, and accurate working plans and detailed drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions: makes final sketch of the proposed drawing, checking dimension or parts, materials to be used, the relation of one part to another, and the relation of the various parts to the whole structure. Makes any adjustments or changes necessary or desired. Inks in lines and letters on pencil drawings as required. Exercises manual skill in the manipulation of triangle, T-square, and other drafting tools. Lays tracing paper on drawing and traces drawing in pencil or ink. Makes charts for representation of statistical data. Makes finished designs from sketches. Utilizes knowledge of various machines, engineering practices, mathematics, building materials, and other physical sciences to complete the drawings.

Mechanical draftsman performs the general duties of a draftsman and also specializes in making rough drafting sketches of proposed mechanical devices, and then drawing necessary details. Prepares accurate scale drawings of parts or machines from specifications.

Courses leading to a diploma in Mechanical Drafting are normally offered only in the evening at TIA. A student may complete his requirements by attending three or four nights a week for eleven quarters. He must be able to take the courses when offered by the Institute in order to finish in this minimum time. The offering of any of these courses is contingent upon sufficient enrollment.

SUGGESTED CURRICULUM BY QUARTER FOR EVENING CLASSES

First Quarter

		C	L	CH
DFT 1120	Drafting I	2	4	4
MAT 1103	Geometry	3	0	3
		5	4	7

Second Quarter

		C	L	CH
DFT 1121	Drafting II	2	4	4
MAT 1102	Algebra	5	0	5
		7	4	9

Third Quarter

		C	L	CH
DFT 1122	Drafting III	2	4	4
ENG 1101	Reading Improvement	2	0	2
		4	4	6

Fourth Quarter

		C	L	CH
DFT 1123	Drafting IV	2	4	4
PHY 1101	Applied Science	3	2	4
		5	6	8

Fifth Quarter

		C	L	CH
DFT 1125	Descriptive Geometry	2	4	4
MAT 1104	Trigonometry	3	0	3
		5	4	7

Sixth Quarter

		C	L	CH
DFT 1130	Drafting V	2	4	4
PHY 1102	Applied Science	3	2	4
		5	6	8

Seventh Quarter

		C	L	CH
DFT 1131	Drafting VI	2	4	4
ENG 1102	Communication Skills	3	0	3
		5	4	7

Eighth Quarter

		C	L	CH
DFT 1132	Drafting VII	2	4	4
PSY 1101	Human Relations	3	0	3
		5	4	7

Ninth Quarter

		C	L	CH
DFT 1133	Drafting VIII	2	4	4
MEC 1113	Shop Processes	2	3	3
		4	7	7

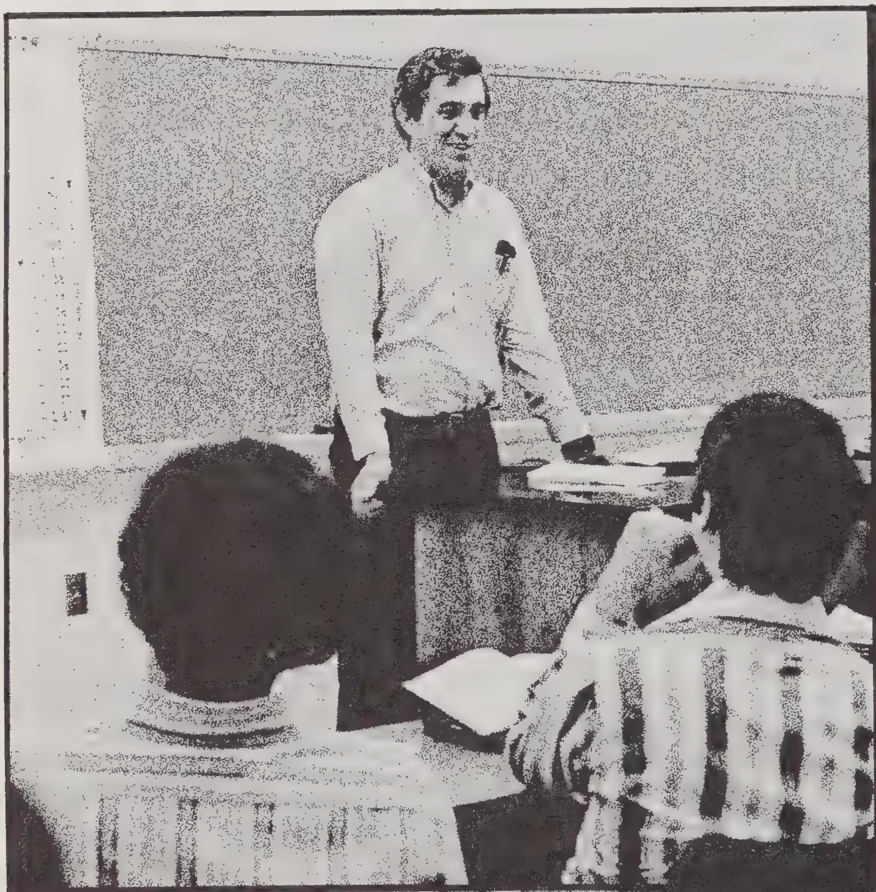
Tenth Quarter

		C	L	CH
MEC 1115	Ferrous Metals	2	3	3
MEC 1114	Shop Processes	2	3	3
		4	6	6

Eleventh Quarter

		C	L	CH
MEC 1116	Non-Ferrous Metals	2	3	3
BUS 1105	Ind. Organization	3	0	3
		5	3	6

COURSE DESCRIPTION



AIR CONDITIONING AND REFRIGERATION

AHR 201 Winter Air Conditioning 3 2 4

Warm air systems, heat emitters, electric heating, forced hot water and steam heating systems including selection and sizing of equipment — registers, grills, furnaces, boilers, radiators, baseboards, piping, and ducts. Fuels and burners used in supplying heat for various types of heating systems — coal, oil, natural gas, manufactured gas, liquified petroleum gas, and electricity. Experiments in equipment selection, installation adjusting, and servicing will be conducted. Heating layout and specifications for an exisiting structure or one in blueprint stage will be prepared.
Prerequisite: DFT 232.

AHR 202 Fuels and Burners 2 3° 3

Advanced course in heating systems with emphasis on new typs of fuels and burners. Demonstrations and experiments with mock-ups and sample systems of gas, fuel oil and electrical installations. Experiments in equipment selection, installation and maintenance will be conducted.
Prerequisite: AHR 201.

AHR 209 Air-Conditioning System Design 5 6° 7

Practical procedures and data for calculating heat loss and heat gain in residential structures. Much of the data is secured from the ASHRAE guide and data book.
Prerequisites: AHR 1124, AHR 1126.

AHR 210 Installation and Design Problems 2 6° 4

This course will consist of making drawings and designs that emphasize commercial refrigeration and air-conditioning layouts. Information is gathered, calculations are made, schematic drawings are prepared, and specifications written for the specified installations.
Prerequisites: DFT 232, AHR 201.

AHR 217 Circuits and Controls II 3 3° 4

Practice in layouts, selection, installation and trouble-shooting of conventional refrigeration and air conditioning control systems. Class and laboratory work includes control of residential and commercial heating and air conditioning systems. Control problems of mechanical refrigeration, zone and central-fan systems. Unit heaters and ventilators, peripheral air conditioning units and radiant-panel heating are studied.
Prerequisites: AHR 1102, AHR 1128.

AHR 228 Air Conditioning Systems & Duct Design 5 6 7

Designed to aid the student in learning to create comfort systems for residence and industrial buildings. The student learns to calculate and specify the required equipment capacity based upon the ASHRAE standards. Practical problems will be used to demonstrate theoretical applications.
Prerequisite: DFT 232.

AHR 230 Seminar and Research 2 6 5

Successful completion of the Air-Conditioning and Refrigeration Technology curriculum is climaxed by the student conducting a research project and writing a report on this project. The student, through consultation with the instructors, will choose an individual project that will, when feasible, involve an actual installation. Frequent conferences with instructor will guide the student in the progress of research and in the preparation of the report.
Prerequisite: AHR 206.

AHR 1101 Automotive Air Conditioning

General introduction to the principles of refrigeration; student of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system.
Prerequisite: PHY 1102.

AHR 1121 Principles of Refrigeration 5 6 7

An introduction to the principles of refrigeration, terminology, the use and care of tools and equipment, and the identification and the function of the component parts of a system. Other topics to be included will be the basic laws of refrigeration; characteristics and comparison of the various refrigerants; the use and construction of valves, fittings, and basic controls. Practical work includes tube bending, flaring and soldering. Standard procedures and safety measures are stressed in the use of special refrigeration service equipment and the handling of refrigerants.
Prerequisite: None.

AHR 1122 Domestic and Commercial Refrigeration 3 9 6

Domestic refrigeration servicing of conventional, hermetic, and absorption systems. Cabinet care, controls, and system maintenance in domestic refrigerators, freezers, and window air conditioning units is stressed. Commercial refrigeration servicing of display cabinets, walk-in-cooler and freezer units, and mobile refrigeration systems is studied. The use of manufacturers catalogs in sizing and matching system components and a study of controls, refrigerants, servicing methods is made. The American Standard Safety Code for Refrigeration is studied and its principles practiced.
Prerequisite: AHR 1121.

AHR 1123 Principles of Air Conditioning 5 6 7

Work includes the selection of various heating, cooling and ventilating systems, investigation and control of factors affecting air cleaning, movement, temperature, and humidity. Use is made of psychrometric charts in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Practical sizing and balancing of ductwork is performed as needed.
Prerequisite: AHR 1122.

AHR 1124 Air Conditioning and Refrigeration Servicing 3 6 5

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification and temperature control of air in an air conditioning space. Installation of various ducts and lines needed to connect various components is made. Shop work involves burner operation, controls, testing and adjusting of air conditioning and refrigeration equipment, and location and correction of equipment failure.
Prerequisite: AHR 1123.

AHR 1126 All Year Comfort Systems 3 6 5

Auxiliary equipment used in conjunction with refrigeration systems to provide both heating and cooling for "all year" comfort will be studied and set up in the laboratory. Included will be oil fired systems, gas fired systems, water circulating systems, and electric-resistance systems. Installation of heat pumps will be studied along with servicing techniques. Reversing valves, special types of thermostatic expansion valves, systems of deicing soils, and electric wiring and controls are included in the study.
Prerequisites: AHR 1123, AHR 1128.

AHR 1128 Automatic Controls 3 6 5

Types of automatic controls and their function in air conditioning systems. Included in the course will be electric and pneumatic controls for domestic and commercial cooling

and heating; zone controls, unit heater and ventilator controls, commercial fan systems controls, commercial refrigeration controls, and radiant panel controls.
Prerequisites: ELC 1102, AHR 1122.

AHR 1130 Duct Layout and Fabrication 2 2 3

Work in drafting room with instruments developing patterns on paper for popular duct fittings. Proper layout procedures are followed in work on paper including square and radius elbows, offsets, transitions, "y' branches and square to round fittings.

ART (ART)

ART 106 History of Art 3 0 3

A study of the origins and development of art forms, starting with prehistoric man and succeeding civilizations, Egyptian, ancient Near East, Aegean, Greek, Etruscan, through Roman.

Slides, films, and available audi-visuals will be used to make comparative studies with contemporary forms.
Prerequisite: None.

ART 107 History of Art 3 0 3

A continuation of ART 106 proceeding from Roman to early Christian, Byzantine, Islamic, early Medieval Romanesque, Gothic and art through the seventeenth century exploring contributions of each age and civilization to contemporary design.

ART 231 Painting with Polymers 2 6 4

An introduction to the medium: a study of the techniques used in painting and illustration with the relatively new acrylic polymer emulsions. Students may select projects or complete assigned projects.
Prerequisite: None.

ART 239 Selective Media 2 3 3

Designed to give students an opportunity to work in a variety of media not otherwise studied.

The media selected to meet the needs and interests of the class will include: sculpture, ceramics, mono-prints, silk-screen printing, lithography, metal enameling, and painting with oils, polymers, and acrylics.
Prerequisite: None.

ART 240 Metal Sculpturing 1 3 2

An introduction to metal as a media of expression in time and space. The basic use of welding, brazing, and soldering will be taught.
Prerequisite: DES 210.

AUDIOVISUAL TECHNOLOGY (AVT)

AVT 201 Audiovisual Technology I 3 9° 6

Basic audiovisual planning. Organization of script, sound and visuals. Coordination of planning with clients' objectives and actual presentation.
Prerequisite: None.

AVT 202 Audiovisual Technology II 3 9° 6

Basic planning of audiovisual techniques, as applied in Audiovisual Technology I will be pursued in Tech. II and III. The solution of problems for these courses will involve other departments of instruction. Students may adapt presentation methods to the subject and department involved necessitating a knowledge of the fundamentals of the particular project coordinated with the head of that department.

Problems will be designed to prompt exploration into all forms of media as well as correlation of graphics, technology, and the performing arts.
Prerequisite: AVT 201 Audiovisual Technology I.

AVT 203 Audiovisual Technology III 3 9° 6

Basic planning of audiovisual techniques, as applied in Audiovisual Technology I will be pursued.

The solution of problems for these courses will involve other departments of instruction. Students may adapt presentation methods to the subject and department involved necessitating a knowledge of the fundamentals of the particular project coordinated with the head of that department.

Problems will be designed to promote exploration into all forms of media as well as correlation of graphics, technology, and the performing arts.
Prerequisite: AVT 202 Audiovisual Technology II.

AVT 210 Audiovisual Equipment Care and Maintenance 2 4° 3

A study in understanding the mechanical and electrical operation of projection equipment, tape recorders, record players, and other magnetic storage devices, covering repair, problem locating and trouble shooting.
Prerequisite: None.

AVT 212 Audiovisual Department Procedures 3 0 3

A study in the techniques of procedural operation of an instructional materials center, a study of the methods of keeping records and data procedures, basic in-service training techniques, physical arrangements, traffic patterns, and sources of equipment and materials.
Prerequisite: None.

AVT 220 Information Resources 3 0 3

Operations of literary mechanics: indexes, catalogues, bibliographies, audiovisual software and equipment sources, from which one can secure illustrations, facts to prepare audiovisuals. Emphasis will be placed on how the technician can "unlock" the door to a vast amount of source material with the least bit of effort.
Prerequisite: None.

AVT 250 Advanced Production 1 6° 3°

A study in the techniques of procedural operation of an instructional materials center, study of the methods of keeping records and data, basic in-service training techniques for the efficient operation of producing unit, physical arrangements, traffic patterns and sources of equipment and materials as well.
Prerequisite: None.

AUTOMOTIVE (AUT)

AUT 1124 Automotive Power Train Systems 3 9° 6

Principles and functions of automotive power train systems; clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair.

AUT 1125 Automotive Servicing 3 9° 6

Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the various component systems of the automobile. Troubleshooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing.

AUT 1123 Automotive Chassis, Suspension, and Braking System 3 8° 6

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension and steering systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, front end and alignment. A complete study of various braking systems employed on automobiles and lightweight trucks. Emphasis is placed on how they operate, proper adjustment, and repair.

AUT 1223 Automotive Transmissions 5 12° 9

Designed as a refresher course in automotive transmissions, the course will consist of all types of transmission design and functions. The straight drive transmission as well as clutch repair will be understood by the student before automatic transmission structure and repair will be taught. Principles of the automatic transmission will be covered and each student will learn names of all parts and their function within the transmission. Special tools and transmission overhaul procedures will also be incorporated to give the student a more complete understanding of today's complex automotive transmissions.

AUT 1224 Advanced Automatic Transmissions 5 12° 9

This course is designed to provide a measure of depth in the understanding of automatic transmissions. Instruction includes classroom study, demonstrations, and student participation in disassembly, reassembly, and testing of selected transmissions. Special emphasis is placed on principles, function, construction, operation, servicing and "troubleshooting" procedures and repair of various types of automatic transmissions.

BUSINESS ADMINISTRATION (BUS)

BUS 101 Introduction of Business 5 0 5

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management.
Prerequisite: None.

BUS 102 Typewriting I 2 3° 3

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts.
Prerequisite: None.

BUS 103 Typewriting II 2 3° 3

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms.
Prerequisite: BUS 102 or the equivalent.

BUS 104 Typewriting III 2 3° 3

Emphasis on production typing problems and speed building. Attention to the develop-

ment of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms.
Prerequisite: BUS 103 or the equivalent.

BUS 105S Typing Office Production 2 3* 3

A course to train the student who possesses basic skills to produce with efficiency typewritten work that would be acceptable in the most exacting business offices. The student learns to think independently regarding style and method.
Prerequisite: Permission of Department Head.

BUS 106 Shorthand I 3 2 4

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms, and phrases.
Prerequisite: None.

BUS 107 Shorthand II 3 2 4

Continued study of theory with greater emphasis on dictation and elementary transcription.
Prerequisite: BUS 106 or the equivalent.

BUS 108 Shorthand III 3 2 4

Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription.
Prerequisite: BUS 107.

BUS 110 Office Machine 2 2 3

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator.
Prerequisite: None.

BUS 111 Secretarial Office Machines 2 2 3

Techniques in operating three basic office machines: ten-key, full-key, and rotary calculator. Problem solving activities that will require students to use correct machine operation to promote skill development in data processed in the business office.
Prerequisite: None.

BUS 112 Records Management I 3 0 3

Fundamentals governing what records to keep, how to store them, how to find them quickly, and how to apply the criteria for determining their disposition or retention. Included are rules for alphabetic indexing.
Prerequisite: None.

BUS 113 Records Management II 3 0 3

Review of the fundamentals of indexing and filing, combining theory and practice by use of cards, miniature letters, filing boxes and guides. Comprehensive study of alphabetic, geographic, subject, and numeric filing.
Prerequisite: BUS 112.

BUS 115 Business Law 3 0 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.
Prerequisite: None.

BUS 116 Business Law 3 0 3

Includes the study of laws pertaining to bailments, sales, risk-bearing, partnership-corporation, mortgages, and property rights.
Prerequisite: BUS 115.

BUS 120 Accounting I 5 2 6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned.
Prerequisite: MAT 110 or MAT 101.

BUS 121 Accounting II 5 2 6

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data or management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.
Prerequisite: BUS 120.

BUS 122 Accounting 5 0 5

Control accounting and additional statements and analyses are covered in this course. Topics include departmental accounting, branch accounting, job order cost system, funds statement and cash flow.
Prerequisite: BUS 121.

BUS 123 Business Finance I 3 0 3

Financing of business units, as individuals, partnerships, corporations, and trusts. A detailed study is made of short-term, long-term, and consumer financing.
Prerequisite: ECO 104.

BUS 124 Business Finance II 3 0 3

Financing federal, state, and local government and the ensuing effects upon the economy. Factors affecting supply of funds, monetary and credit policies.
Prerequisite: BUS 123.

BUS 130 Secretarial Accounting 5 2 6

Basic principles, procedures, and terminology of accounting, as related to secretarial duties in the business office. Includes making entries, preparing financial statements and analyzing and interpreting financial data.
Prerequisite: MAT 110.

BUS 140 Industrial Accounting 3 2 4

Basic principles of accounting for assets, liabilities, and net worth. Familiarization with the use of accounting data in the industrial setting and with cost accounting theory and practices.
Prerequisite: None.

BUS 183M Terminology and Vocabulary 3 0 3

To develop an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in the medical profession.
Prerequisite: None.

BUS 205 Advanced Typewriting 2 3° 3

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal documents.
Prerequisite: BUS 104.

BUS 206M Dictation and Transcription 3 2 4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: BUS 108.

BUS 206T Dictation and Transcription 3 2 4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: BUS 108.

BUS 207M Dictation and Transcription 3 2 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: BUS 206M.

BUS 207T Dictation and Transcription 3 2 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: BUS 206T.

BUS 208M Dictation and Transcription 3 2 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy.
Prerequisite: BUS 207M.

BUS 208T Dictation and Transcription 3 2 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy.
Prerequisite: BUS 207T.

BUS 211 Office Machines 2 2 3

Instructions in the operation of the bookkeeping-accounting machines, duplication equipment, and the dictating and transcribing machines.
Prerequisite: BUS 110 or BUS 111.

BUS 212 Machine Transcription 2 2 3

Students develop skill in typing mailable letters, memoranda, and manuscripts directly from recorded belts. Emphasis is placed on vocabulary development, spelling, and word division.
Prerequisite: BUS 102.

BUS 213 Advanced Machine Transcription 2 2 3

Students do more intensive work in transcribing directly from recorded belts. Additional exercises are given to increase vocabulary and improve spelling.
Prerequisite: BUS 212.

BUS 214 Secretarial Procedures I 3 2 4

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: The role of the professional secretary, receptionist duties, purchasing equipment and supplies, processing mail, telephone techniques.
Prerequisites: None.

BUS 215M Office Application 6 0 6

During the sixth quarter only, students are assigned to work in a medical office for six hours per week. The objective is to provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisites: BUS 214, BUS 205, BUS 208M, BUS 211.

BUS 215T Office Application 6 0 6

During the sixth quarter only, students are assigned to work in a business, technical, or professional office for six hours per week. The objective is to provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisites: BUS 214, BUS 205, BUS 208T, BUS 211.

BUS 217 Business Law 3 0 3

A study of the powers, policies, methods, and procedures used by the various federal, state and local administrative agencies in promoting and regulating business enterprises. It includes a consideration of the constitutional and statutory limitations on these bodies and judicial review of administrative action.
Prerequisite: BUS 116.

BUS 225 Cost Accounting 3 2 4

Nature and purposes of cost accounting; accounting for direct labor, materials, and factory burden; job cost, and standard cost principles and procedures; selling and distribution cost; budgets, and executive use of cost figures.
Prerequisite: BUS 121.

BUS 226S Payroll Records and Accounting 3 0 3

A study in the preparation of the payroll which includes: (1) Figuring basic wages, (2) Deducting for taxes (FICA, FUTA, and Federal Income Taxes), and (3) Making necessary journal entries, as well as other problems encountered in preparing the payroll.
Prerequisites: BUS 120 or BUS 130

BUS 229 Taxes 3 2 4

Application of federal and state taxes to various businesses and business conditions. A study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise, and inheritance.
Prerequisite: BUS 121.

BUS 232 Sales Development 3 0 3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering

and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.
Prerequisite: None.

BUS 233 Personnel Management 3 0 3

Principles of organization and management of personnel, procurement, placement, training, performance checking, supervision, remuneration, labor relations, fringe benefits and security.
Prerequisite: None.

BUS 235 Business Management 3 0 3

Principles of business management including overview of major functions of management, such as planning, staffing, controlling, directing, and financing. Clarification of the decision-making function versus the operating function. Role of management in business —qualifications and requirement.
Prerequisite: None.

BUS 237 Wholesaling 3 0 3

The development of wholesaling; present day trends in the United States. A study of the functions of wholesaling.
Prerequisite: None.

BUS 239 Marketing 5 0 5

A general survey of the field of marketing, with a detailed study of the functions, policies, and institutions involved in the marketing process.
Prerequisite: ECO 104.

BUS 242 Sales Promotion 3 0 3

The scope and activities of sales promotion with emphasis on the coordination of advertising, display, special events and publicity. External and internal methods of promoting business; budgeting, planning, and implementing the plan.
Prerequisite: None.

BUS 243 Advertising 3 0 3

The role of advertising in a free economy and its place in the media of mass communications. A study of advertising appeals; product and market research; selection of media; means of testing effectiveness of advertising. Theory and practice of writing advertising copy for various media.
Prerequisite: None.

BUS 245 Retailing 3 0 3

A study of the role of retailing in the economy including development of present retail structure, functions performed, principles governing effective operation and managerial problems resulting from current economics and social trends.
Prerequisite: None.

BUS 247 Business Insurance 3 0 3

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included.
Prerequisite: None

BUS 250 Real Estate 3 0 3

A study of the theories and practices in the real estate market. The study includes the legal framework, the economic significance, and the social implications that make up the real estate market.

BUS 271 Office Management 3 0 3

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and actuating office problems.
Prerequisite: None.

BUS 272 Principles of Supervision 3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed.
Prerequisite: None.

BUS 274 Secretarial Procedures II 3 2 4

This course is designed to give the advanced student the realistic attainable goals of professional secretarial status. The objective is to train the student to be knowledgeable about functions and procedures. Simultaneously, the student should demonstrate a high level of competency in secretarial duties and be able to serve as executive assistant to top management.

Time will also be spent visiting local businesses and industry.

Among the topics covered include the following: Assistance with travel and conferences, collecting, processing and presenting business data, financial and legal facets of secretarial work, professional future — fulfilling the administrative role, insurance claims, payroll and tax duties.
Prerequisite: BUS 214.

BUS 284M Terminology and Vocabulary 3 0 3

Greater emphasis on an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in medical offices.
Prerequisite: BUS 183M.

BUS 300S Current Trends in Business 2 3 3

Designed to aid the student to become more aware of current trends in the business world through reading, reporting, informal discussions, and field trips.
Prerequisite: Advance standing in Business Administration.

BUS 1102 Typewriting 2 3* 3

A beginning course in touch typewriting, with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, and tabulation.
Prerequisite: None.

BUS 1103 Small Business Operations 3 0 3

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations.
Prerequisite: None.

BUS 1105 Industrial Organizations 3 0 3

Methods, techniques, and practices of modern management in planning, organizing and controlling operations of a manufacturing concern. Introduction of the competitive system and the factors constituting product cost.
Prerequisite: None.

CHEMISTRY (CHM)

CHM 101 Chemistry 4 2 5

Study of the physical and chemical properties of substances, chemical changes, elements, compounds, gases, chemical combinations, weights and measurements, theory of metals, acids, bases, salts, solvents, solutions, and emulsions. In addition study of carbohydrates, electrochemistry, electrolytes, and electrolysis in their application of chemistry to industry.
Prerequisite: MAT 101.

CHM 111 General Chemistry I 4 3° 5

An introductory chemistry course involving chemical terminology, fundamental principles, atomic structure, periodic classification of the elements, formulas and equations, the properties of the gaseous, liquid and solid states of matter, properties of mixtures and the various types of compounds, valence and oxidation number, chemical bonds, classification and naming compounds, types of chemical reactions, and solutions are studied as are stoichiometry and energy relationships in chemical changes. Laboratory work emphasizes experiments which yield data that, when analyzed and interpreted, reveal important relationships to lecture topics. When practical the student is told to draw tentative conclusions by assuming that his data is typical of that which would be obtained from a large number of observations.
Prerequisite: None.

CHM 112 General Chemistry 4 3° 5

A continuation of CHM 111. A study of greater depth is made of the properties of the gaseous, liquid and solid state, of concentrations of solutions, of gas law problems and stoichiometry and energy relationships. A detailed study is made of the halogens, reaction rates and chemical equilibrium, ionization and ionic equilibria and oxidation and reduction reactions. Laboratory work consists of various inorganic reactions and preparations, and investigations of properties of solutions.
Prerequisite: CHM 111.

CHM 113 General Chemistry III 4 3° 5

A continuation of CHM 112. The different families of elements are studied in detail, with emphasis on their sources, refining processes, and chemical properties. A study of fundamental concepts of nuclear and electrochemistry is made. Laboratory work emphasizes the properties and laboratory preparations of the elements making up the various families of elements and introductory experiments in nuclear and electrochemistry.
Prerequisite: CHM 112.

CHM 121 Quantitative Chemical Analysis I 3 6° 5

Emphasis is placed on developing laboratory techniques employed in the volumetric analysis of acids and bases. The students will become thoroughly familiar with the principles and procedures of neutralization titration. Classroom work will emphasize the stoichiometric calculations involved in interpreting the results of analysis. Laboratory work will consist of percentage analysis of selected substances.
Prerequisite: CHM 113.

CHM 222 Quantitative Chemical Analysis II 2 *9°* 5

The more complex types of quantitative analysis. Special emphasis on the theory of oxidation-reduction and gravimetric analysis. Instrumental analysis is introduced and use of modern analytical devices is stressed. The student will become familiar with the principles of redox reactions, ionization constants and pH of solutions. Stress is placed on the stoichiometric calculations of quantitative chemical analysis. Classroom work complements quantitative.
determinations in the laboratory.
Prerequisite: CHM 121.

CHM 227 Physical Chemistry 3 2 4

Atomic theory, states of matter, chemical thermodynamics, molecular properties of solutions, equilibria, phase role, electrochemistry, kinetics, surface chemistry, and photochemistry constitute major areas of study.
Prerequisite: CHM 121.

CHM 231 Organic Chemistry I 3 *6°* 5

Nomenclature, structure, preparation, properties, and reactions of aliphatic organic compounds. Laboratory work emphasizes techniques.
Prerequisite: CHM 113S.

CHM 232 Organic Chemistry II 3 *6°* 5

The nomenclature, structure, preparation, properties, and reactions of aromatic organic compounds. Laboratory work emphasizes techniques and involves preparation and analysis of selected organic compounds.
Prerequisite: CHM 231.

CHM 233 Organic Chemistry III 3 *6°* 6

A continuation of CHM 232. Polymers and other macro molecules will be studied in details with some emphasis on synthetic textile fibers. Laboratory work will be centered around Polymers.
Prerequisite: CHM 232.

CHM 241 Industrial Chemical Analysis I 3 *9°* 6

An industrial laboratory situation is simulated. Principles and techniques learned in previous quarters are utilized in solution of problems common to local industry. It will be the responsibility of the instructor to determine and submit in outline form a program of suitable scope and sequence of topics which he will work out from consultation with his local advisory committee, representing the industry. This program must be approved by the administration and accepted by the appropriate State-level authority.
Prerequisite: CHM 222.

CHM 242 Industrial Chemical Analysis II 3 *12°* 7

An industrial laboratory situation is maintained and the emphasis on instrumentation is expanded. Problems on industrial quality control. Plan visitations.
Prerequisite: CHM 241.

CHM 250 Qualitative Inorganic Analysis 2 4 4

Lectures involve the practice and theory which underlie the ways and means by which substances can be identified. Specifically the concern is finding out which cations (metallic ions and ammonium ion) and anions (acid radicals) are present in substances and mixtures of substances. Laboratory practice involves the separation and identification of a few common and representative cations and anions in a variety of unknowns.
Prerequisite: CHM 112.

CHM 252 The Chemistry of Living Systems 3 2° 4

This course is an elective for Chemical Technology students. It relates basic chemistry to living systems. In the laboratory the student acquires basic techniques for laboratory study of the structures and functions of organisms. Application is also made to laboratory techniques used in related fields.
Prerequisites: CHM 205S, 121.

DENTAL (DEN)

DEN 1001 Introduction to Dental Assisting 2 0 2

An introduction to the history of dental assisting, the modern role of the dental assistant in practice and in relation to other members of the dental health team, and the personal and ethical requirements for safe and effective practice.
Prerequisite: None.

DEN 1002 Dental Materials 2 9 5

Identification of dental materials, characteristics of each, evaluation of quality, and principles and procedures related to manipulation and storage of various dental materials.
Prerequisite: None.

DEN 1003 Preclinical Sciences I 3 3 4

Basic information from nutrition, anatomy and physiology, and oral and dental anatomy as related to dental science and the practice of dental assisting. Designed as three units which may be scheduled for either concurrent or sequential teaching.
Prerequisite: None.

DEN 1004 Preclinical Sciences II 4 0 4

Fundamental information from oral pathology, pharmacology, bacteriology, and common emergencies as related to the role of the dental assistant. Designed in four units to permit flexibility in scheduling.
Prerequisite: DEN 1003.

DEN 1005 Dental Office Management I 3 2 4

Fundamentals of accounting as applied to dental office procedures. Practice in application of principles to various forms commonly used in the dental office.
Prerequisite: None.

DEN 1006 Clinical Procedures I 3 6 5

Principles and procedures related to radiology, dental instruments and equipment, and chairside techniques of dental assisting. Designed in three units for flexibility in scheduling.
Prerequisite: DEN 1002.

DEN 1007 Clinical Procedures II 4 6 6

Role of the dental assistant in various dental specialties, such as endodontics, periodontics, orthodontics, prosthodontics, and oral surgery.
Prerequisite: DEN 1006.

DEN 1008 Dental Office Management II 3 0 3

Principles and procedures related to management of the dental office, including main-

tenance of inventories, ordering of supplies, patient records, financial records, making appointments and establishing favorable patient relations.
Prerequisite: DEN 1005.

DEN 1009 Dental Office Practice I 0 12 4

Introduction to practice in the dental office or dental clinic, emphasis is on the role of the dental assistant in the operatory in a variety of dental procedures.
Prerequisite: DEN 1008.

DEN 1010 Dental Office Practice II 0 27 9

Practice in the dental office or dental clinic; rotation of assignments to encompass experience in office management, the dental laboratory, and the operatory. Emphasis on chairside assisting in a variety of clinical procedures.
Prerequisite: DEN 1009.

DEN 1012 Dental Roentgenology 2 6 4

Study of principles related to exposing, processing, and mounting dental x-ray. Radiation hazards and safety measures employed for protection of patient and self are stressed.

DEN 1013 Oral Health Education 1 2 2

Designed to present information on deposits and stains, dental caries and periodontal disease as related to prevention and control with emphasis on development of self confidence in interpreting dental health information and in demonstrating techniques to individuals and groups.

DESIGN (DES)

DES 101 Basic Drawing and Design 3 9° 6

An introduction to drawing and basic design fundamentals and principles. Emphasis will be placed on line, two and three-dimensional shapes, perspective, light and shade, equipment and materials of the art and design profession.

DES 107 Drawing 0 6° 2

A study of the body structure. A live model will be used with emphasis on proportioning, masses and movement.

DES 108 Illustration 0 6° 2

Continuation of DES 107. Using the figure as our environmental element in simulated daily activities. Distortion of the figure in the form of cartoons, illustrations, and other experimental use.
Prerequisite: DES 107.

DES 110 Creative Problem Solving 3 0 3

The aim of this course is to improve attitudes and thinking abilities, to develop a strong innovation to utilize one's creative potential, to develop a greater curiosity in problem solving, and to gain open-mindedness toward ideas of others. Special emphasis is placed on individual and group brain storming through the creative problem solving process.

DES 116 Basic Photography 2 6° 4

An introduction to the field of photographs, photographic equipment and materials.

A study of the fundamental techniques of the camera and its expressive possibilities in relation to the field of design and visual communications. Assigned camera projects, darkroom procedures and equipment.
Prerequisite: None.

DES 124 Type and Lettering 3 6° 5

Hand lettering, equipment and materials, type, and copy fitting. Emphasis will be placed on the use of type and lettering as an element of visual communications.

DES 210 Advertising Design I 3 9° 6

An introduction to cartooning, intermediate layout and design techniques for printing. Laboratory assigned graphical problems will cover such topics as color separation, halftones, and materials for the development of posters, show cards, banners, hand-lettered documents, brochures and folders.
Prerequisit: DES 218.

DES 211 Three Dimensional Design 1 3° 2

The student will have an opportunity to depart from the two-dimensional and work with elements in the round. Using a combination of materials the student will exercise his creativity with problems such as free forms, mobiles and packaging.

DES 214 Advertising Illustration 1 3 2

Assigned problems in advanced illustration. Emphasis is placed on originality and the readiness of the student to explore assigned graphical tasks and problems.
Prerequisite: DES 108.

DES 218 Commercial Graphics and Photography 3 6° 5

Introduction to layout and design for printing. Mechanicals and basic printing reproductive processes.
Prerequisite: DES 124.

DES 220 Advertising Design II 3 9° 6

Advanced problems in layout and design techniques for printing, illustration, cartooning, animation, display design and lettering. Laboratory and graphic problems dealing with magazine and book illustration, the fashion figure, outdoor sign writing, displays and exhibits for business and industry.
Prerequisite: DES 210.

DES 230 Advertising Design III 3 9° 6

A course providing simulated professional working conditions utilizing advanced layout and design techniques for printing. Each student will explore a variety of problems, and present his solutions for general class critique and discussion. This course will climax with the review and presentation of the student's individual portfolio of professional work.
Prerequisite: DES 220.

DES 235 Advertising and Marketing 5 0 5

A study of the techniques used in creating effective advertising for various types of media. The physical consideration of the advertisment such as size, position, color, frequency of insertion, layout, coupons and inquiries. Analysis of techniques to cases in national, retail, mail order, industrial and professional advertising with consideration given to budgetary practices.
Prerequisite: None.

DES 238 Advertising Studio 0 6° 2

Problem solving in graphic design in selected media with relation to limitations in printing reproduction through the use of layouts, comprehensive and mechanical art.

DES 239 Rendering 2 3° 3

This course will include technique of heightening the three-dimensional effects of both pictorial and orthographic drawings through the use of variation in value, texture, and color. Additional depth of experience will be gained in preparing presentation pictorials.
Prerequisite: DFT 102 (or equivalent).

DES 240 Senior Project 2 6° 4

A project designed to allow the students in-depth study of his major relating to the student's individual interests and concepts. The project will focus cumulative knowledge in one comprehensive problem which will reflect updated concepts within the field.
Prerequisite: Permission of instructor.

DES 242 Portfolio 0 6° 2

Development of a portfolio to show for prospective employment. This portfolio will be made up of visual material which represents the students art work and interests.

DES 248 Air Brush 2 3° 3

This course is designed to develop a working knowledge of air brush maintenance and fundamentals such as, line work, flat washes, graded washers, rendering basic forms, transparent and opaque colors; techniques used in rendering pictorial forms, such as products, figures, technical and architectural—including photo retouching.
Prerequisite: DES 239.

DES 249 Architectural Rendering 2 3° 3

Application and presentation of architectural subjects through the use of various kinds of materials and techniques of rendering.
Prerequisite: DES 239.

DES 250 Technical Illustration I 3 9° 6

Introduction to Technical Illustration. A study of isometric theory dealing with basic tools and equipment.
Prerequisite: DFT 102.

DES 251 Technical Illustration II 3 9° 6

A continuation of the study of basic technical illustration theory, tools and equipment.
Prerequisite: DES 150.

DES 252 Technical Illustration III 3 9° 6

A development of the techniques necessary to utilize the materials and equipment of the illustrator. A study of axonometric theory and use in illustrations. Project materials from previous courses will be used as problem assignments.
Prerequisite: DES 251.

DES 262 Technical Publications 2 3° 3

A study of methods of producing diagrams and handbook illustrations for technical publications.
Prerequisite: DES 251.

DRAFTING (DFT)

DFT 101 Technical Drafting 2 4 3

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced.
Prerequisite: None.

DFT 102 Technical Drafting 2 4 3

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphic analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and developments of various types of geometrical objects.
Prerequisite: DFT 101.

DFT 103 Technical Drafting 1 6° 3

Intersection and developments and their practical solutions. Where applicable, model solutions accompany the problems. The various techniques employed to produce and render isometric and oblique drawings, isometric, dimetric and trimetric projections, will be included.
Prerequisite: DFT 106.

DFT 118 Drafting and Blueprint Interpretation 0 6 2

Basic drafting techniques are covered to provide a working knowledge of drafting as a tool for communicating ideas. Reading and interpreting of blueprints is emphasized.
Prerequisite: None.

DFT 201 Technical Drafting 2 6° 4

Applications and constructions of charts, graphs, and nomographs in engineering and technical data. Screw threads, springs, keys, rivets, piping, and welding symbols, methods of representing and specifying will be covered. Basic mechanisms of motion transfers, gears and cams, will be studied and drawn with emphasis on methods of specifying, calculating, dimensions, and delineating.
Prerequisite: DFT 103.

DFT 204 Descriptive Geometry 2 4 4

Graphic analysis of space problems involving points, lines, connectors, and a combination of these. Practical design problems will be stressed with analytical verification where applicable. Visualization shall be stressed on every problem.
Prerequisite: DFT 102.

DFT 205 Design Drafting I 2 6° 4

Basic design is introduced in the study of motion transfer mechanisms as they relate to power trains. Principles of design sketching, design drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices constitute areas of

study. Types and methods of specifying materials and workmanship are an integral part of the course.
Prerequisites: DFT 204, MAT 102, PHY 102.

DFT 206 Design Drafting II 2 6° 4

Research to solve a problem in design by consulting various manuals, periodicals, and through laboratory experiments. A written technical report, preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem.
Prerequisites: DFT 205, MEC 210.

DFT 211 Mechanisms 3 2 4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkage, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains.
Prerequisites: DFT 201 & 204, MAT 103, PHY 106.

DFT 212 Jig and Fixture Design 2 6° 4

Commercial standards, principles, practices and tools of jig and fixture design. Individual project and design work to acquaint students with the types of jigs and fixtures and their design.
Prerequisites: DFT 205, DFT 211.

DFT 226 Air-Conditioning Systems Drawing 0 6° 2

Drawing of air-conditioning systems and study of related architectural and structural elements. Sheet metal intersections and developments and types of duct installation. Air-conditioning and refrigeration layouts, diagrams, and schematics.
Prerequisites: DFT 102, AHR 103, AHR 201, AHR 216.

DFT 232 AHR Drafting 2 4 3

Drawing of air-conditioning systems and study of related architectural elements. Emphasis will be placed on preparing orthographic and isometric presentations of duct systems, mechanical layouts, piping installations, electrical schematics and diagrams.
Prerequisite: None.

DFT 1101 Schematics & Diagrams: Power Mechanics 0 3 1

Interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes.

DFT 1104 Blueprint Reading: Mechanical 0 3 1

Interpretation and reading of blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes.
Prerequisite: None.

DFT 1105 Blueprint and Reading: Mechanical 0 3 1

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes.
Prerequisite: DFT 1104.

DFT 1106 Blueprint Reading: Mechanical 0 3 1

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly.
Prerequisite: DFT 1105.

DFT 1116 Blueprint: Air Conditioning 1 3 2

A specialized course in drafting for the heating, air conditioning and refrigeration student. Emphasis will be placed on reading of blueprints that are common to the trade; blueprints of mechanical components, assembly drawings, wiring diagrams and schematics, floor plans, heating system plans including duct and equipment layout plans, and shop sketches. The student will make tracings of floor plans and layout air conditioning systems.
Prerequisite: DFT 1104.

DFT 1120 Drafting I 2 4 4

An introduction to drafting and the study of drafting practices. Instruction is given in the selection, use and care of instruments, singlestroke lettering, applied geometry, freehand sketching consisting of orthographic and pictorial drawings. Orthographic projection, reading and instrument drawing of principal views, single auxiliary views (primary), and double (oblique) auxiliary views will be emphasized. Dimensioning and note practices will be studied with reference to the American Standards Association practices. Methods of reproducing drawings will be included at the appropriate time.
Prerequisite: None.

DFT 1121 Drafting II 2 4 4

A Continuation of DFT 1120.
Prerequisite: DFT 1120.

DFT 1122 Drafting III 2 4 4

The trainee will study simple and successive revolutions and their applications to practical problems. Sections and conventions will be studied and both detail and assembly sections will be drawn. Intersections and developments will be studied by relating the drawing to the sheet metal trades. Models of the assigned drawings will be made from construction paper, cardboard, or similar materials as a proof of the solution to the problems drawn.

Methods of drawing and projecting axonometric, oblique, and perspective drawings will be studied with emphasis on the practical applications of pictorial drawings. Various methods of shading will be introduced and dimensioning and sectioning of oblique and axonometric pictorials will be done.
Prerequisite: DFT 1121.

DFT 1123 Drafting IV 2 4 4

A continuation of DFT 1122.
Prerequisite: DFT 1122.

DFT 1125 Descriptive Geometry 2 3 3

Graphical analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Included are problems dealing with solid geometry theorems. Where applicable, each graphical solution shall be accompanied by the analytical solution.
Prerequisite: DFT 1121.

DFT 1130 Drafting V 2 4 4

An introduction to mechanical drafting beginning with problems concerning precision

and limit dimensioning. Methods of fastening materials, and fasteners: keys, rivets, springs, and welding. Symbols will be studied and drawings will be made in involving these items. Principles of design will be introduced with the study of basic mechanisms of motion transfer; gears, cams, power trains, pulleys, belting and methods of specifying and calculating dimensions will be studied. Drawings will be made involving these mechanisms.
Prerequisite: DFT 1123

DFT 1131 Drafting VI 2 4 4

A continuation of DFT 1130.
Prerequisite: DFT 1130

DFT 1132 Drafting VII 2 4 4

Principles of design sketching, design drawings, layout drafting, detailing from layout drawings, production drawings and simplified drafting practices constitute areas of study. Forging and casting drawings will be made from layouts. Specifications, parts list and bill of materials are emphasized in this course. The student will develop a complete set of working drawings of a tool, jig, fixture or simple machine and learn principles of design, handbook and manual usage.
Prerequisite: DFT 1131.

DFT 1133 Drafting VIII 2 4 4

A continuation of DFT 1132.
Prerequisite DFT 1132.

DFT 1220 Shop Sketching 0 3* 1

Development of accurate freehand sketches of machine parts, visual solution in orthographic and pictorial will be rendered with basic dimensions. Speed, accuracy and neatness will be emphasized.
Prerequisite: None.

DFT 1221 Machinist Drafting I 0 4 2

A course designed to familiarize students with drafting equipment, procedures, and techniques. Emphasis to be placed on 3-view drawing solutions with dimensions.
Prerequisite: DFT 1220.

DFT 1222 Machinist Drafting II 0 4 2

An advanced course in drafting practices. More details, assemblies, sub-assemblies and reproduction processes will be included. Emphasis will be placed on accuracy, neatness, speed, and legibility.
Prerequisite: DFT 1221.

ECONOMICS (ECO)

ECO 102 Economics 3 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large.
Prerequisite: None.

ECO 104 Economics 3 0 3

Greater depth in principles of economics, including a penetration into the composition

and pricing of national output, distribution of income, international trade and finance, and current economic problems.
Prerequisite: ECO 102.

ECO 201 Labor Economics and Labor Relations 3 2 4

Emphasis is placed on the history of the labor movement in the United States, the development of methods and strategies by labor organizations and by management, the shift in the means of public control; and the factors of income and economic security.
Prerequisite: ECO 104.

ELECTRICAL (ELC)

ELC 101 Fundamentals of Electricity 4 4 or 6 6

Elementary principles of electricity including: basic electric units, Ohms law, Kirchhoffs law, network theorems, magnetics, basic electrical measuring instruments, inductance, capacitance, sine wave analysis, and non-resonant resistive, inductive and capacitive networks.
Prerequisite: None.

ELC 102 Fundamentals of Electricity 4 4 or 6 6

Series and parallel resonant-circuit analysis, resonant and non-resonant transformer analysis, basic diode power supply analysis, introduction to non-linear resistive control devices, and introduction to electro-mechanical devices.
Prerequisite: ELC 101.

ELC 1102 Applied Electricity 2 3° 3

The use and care of test instruments and equipment used in servicing electrical apparatus for air conditioning and refrigeration installations. Electrical principles and procedures for trouble-shooting of the various electrical devices used in air conditioning, heating, and refrigeration equipment. Included will be transformers, various types of motors and starting devices, switches, electrical heating devices and wiring.
Prerequisite: PHY 1101.

ELC 1112 Direct and Alternating Current 5 15° 10

A study of the structure of matter and the electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. Analysis of direct current circuits by Ohm's law and Kirchhoff's law; sources of direct current potentials. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis.
Prerequisite: None.

ELECTRONIC DATA PROCESSING (EDP)

EDP 103 Introduction to Computer Concepts 4 0 4

An introductory course in computers for the student who plans to pursue the degree in data processing as well as the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required.

EDP 105 Keypunching 2 6 4

A study of the keypunch machine. Instruction emphasizes the correct techniques,

mastery of the keyboard and development of speed and accuracy. The student learns and drills on the numeric keyboard, the alphameric keyboard and program drum card and preparation and use.
Prerequisite: None.

EDP 110 Functional Wiring 3 2 4

A study of unit record procedures and operating practices. Student laboratory work emphasizes concepts of punched-card data processing equipment.
Prerequisite: None.

EDP 114 Compiler Language I 2 4 4

A fundamental course in Fortran or PL/1 programming. The Fortran or PL/1 language structure, statements and programming methods and techniques are studied. The student will develop program logic and programs for solving sample problems.
Prerequisite: EDP 103.

EDP 116 Assembly Language 2 4 4

The study of symbolic computer languages with emphasis on a particular example of such a language. The student will develop program logic and write programs using assembly language to solve appropriate assigned problems.
Prerequisite: EDP 103.

EDP 118 Compiler Language II 2 4 4

This course is designed to provide basic training in COBOL programming. The COBOL language structure, statements, and programming methods and techniques are studied. The student will develop program logic and write COBOL programs for solving sample problems.
Prerequisite: EDP 103.

EDP 211 Data Processing Application I 2 4 4

This course is designed to provide the student with sufficient knowledge in computer methodology to permit the use of computers in business. Emphasis will center around the use of the Fortran language to solve both business and scientific type problems encountered in the business environment. Statistical analysis will be studied as an aid to business decision-making.
Prerequisites: EDP 114, MAT 214.

EDP 212 Data Processing Application II 2 4 4

This course is designed to afford the student the opportunity to get into more complex problem solving. The SORT feature and the REPORT WRITER feature are also studied and applied to problems.
Prerequisite: EDP 118.

EDP 213 Computer Systems I 2 2 3

A study of computer systems involving such concepts of architecture and/or programming as channels, interrupts, etc. This course also provides a continuing study of Assembler Language and a study of data set storage devices and methods of data set organization.
Prerequisite: EDP 116.

EDP 214 Computer Systems II 2 2 3

A continued study of computer systems. This course will include: a study of job con-

trol language, programming for data sets, and a closer look at an operating system. Hardware systems will be included through a study and comparison of systems currently available.
Prerequisite: EDP 213.

EDP 215 Statistical Programming 2 4 4

Practical experience in the statistical solution of business problems through the use of computers. Measures of central tendency, variation, confidence intervals, tests of hypothesis, and relationships between variables. Methods of organizing, analyzing, interpreting and presenting data are studied.
Prerequisites: EDP 114, MAT 214.

EDP 217 Numerical Analysis Programming 2 4 4

A development of the mathematical principles upon which many computing methods are based. Topics introduced include theory of errors, numerical integration and differentiation, summation procedures, numerical solution of equations, and approximations of various types.
Prerequisites: EDP 114, MAT 201.

EDP 218 Data Processing Project 1 8 5

Individual assignments of a carefully selected project will be the work of the student during this course. It will give the student an opportunity to initiate and carry out a project taken from outside the school. This course places the responsibility upon the student to solve a significant problem with a minimum of assistance from the instructor.
Prerequisite: Sixth quarter standing and approval of instructor.

EDP 231 Computer Language Survey 3 0 3

This course is designed to provide additional programming languages to the student. The languages to be studied are subject to be changed depending on what the most popular languages are at the time this course is being taught. The intent of the course is to broaden the students' knowledge of programming languages.
Prerequisites: EDP 114, EDP 116, EDP 118.

EDP 234 Linear Programming 3 0 3

Lecture and problems encompassing the scope and potential of using mathematical programming with computers to increase industrial efficiency. This course presents the network technique of management planning, scheduling and control. Basic rules of network planning are presented with laboratory assignments designed to implement the theoretical aspects of Critical Path Method (CPM).
Prerequisite: Fifth quarter standing.

EDP 240 Use of Package Programs 2 2 3

A study of how to effectively use programs and packages that are available to save on actual programming time. Lectures and lab assignments will be given in the use of both user written and manufacturer supplied routines. Basic contents will include: Statistical Analysis System (SAS), Tele-Storage and Retrieval System (TSAR) and the IBM Utilities for System/360.
Prerequisite: EDP 214.

CHILD CARE (EDU)

EDU 1101 Activities for Young Children 3 3* 4

Designed to promote understanding of the need for play and developmental activities for children. Emphasis will be placed on the knowledge of and implementation of activities appropriate to children at various levels of development.

EDU 1103 Music in the Early Childhood Program 3 3° 4

Study of music which is appropriate for young children and ways of integrating music into the total program of activities. Students learn to utilize a wide variety of materials for rhythm, instrumental performance, and dramatic play. Laboratory sessions provide opportunities for learning songs and developing extensive files; field experience provides opportunities to participate in and evaluate music activities for various age groups.

EDU 1105 Science in the Early Childhood Program 3 3° 4

Study of those scientific facts, concepts, and phenomena that are of interest to young children. Laboratory experiences provide opportunities to carry out simple experiments in which young children could participate. Each student will plan a science program which could be used as an integral component of the overall program for young children in group care.

EDU 1108 Art in the Early Childhood Program 3 2 4

Study of art media in relation to the creative process in young children, of the educational component that each medium reinforces, and of the ways a variety of low-cost art activities can be incorporated into a program for young children. Laboratory sessions provide first-hand experience with all of the media, opportunities to explore the uses of each, and practice in the care and storage of materials. Each student will plan a meaningful sequence of art activities which could be incorporated into a program for young children.

EDU 1110 Literature in the Early Childhood Program 3 0 3

Study of literature for young children, with emphasis on criteria for evaluating the literary value of children's books. Extensive reading and development of a topical file provide resources for selection of appropriate materials to use in field practice, to develop skill in oral reading and in story telling.

EDU 1120 Communicating Effectively with the Young Child 3 0 3

Study of language development in relation to adult models and the child's early experiences. Remedial approaches to improving the student's oral communication, in order to serve as an effective model. Case studies provide opportunities to analyze problems of adult-child communication and to derive guidelines for establishing effective communication patterns with young children.

EDU 1123 Conceptual and Language Development 3 0 3

Study of means for helping children develop in their ability to communicate and to formulate concepts about their environment. Emphasis is on utilization of all facets of the program to reinforce concept development and to increase vocabulary through stimulation of oral communication. Reading assignments and recordings of children's speech provide opportunities to study speech development, to establish realistic expectations and to identify children with needs for special attention to language development.

EDU 1125 Parent Education 3 0 3

Designed to develop understanding of the rewards and difficulties of parents. Role playing provides opportunities to practice ways of working with parents through home visits, individual conferences, informal conversations, and group meetings. The relationship of the child care facility to other community agencies is explored, including ways each can best serve children and their families. Emphasis is given to the responsibility of child care workers to know about community resources, to be sensitive to needs of parents, and to help parents become aware of and utilize services of the community.

EDU 1130 Day Care for Young Children 2 3° 4

Designed to develop increased self-awareness, and the perception of self in the field of child care. The role and responsibilities, the ethics, liabilities and potentialities of being employed in child care will be explored in depth. Opportunities to observe child care in various settings will be provided.

EDU 1132 Health and Nutrition 4 3° 5

(1) Study of its influence on physical and emotional health during infancy and early childhood. The practices and procedures for promoting good health among children in group care will be emphasized.

(2) Study of basic nutrition with emphasis on the importance of balanced diet in the growth and maintenance of healthy children.

EDU 1135 Human Growthand Development 5 3° 6

A study of the developmental sequence of the prenatal, infant and early childhood periods. Emphasis is given to the factors influencing development and the importance of experiences in establishing patterns of behavior, attitudes and interpersonal skills. Opportunities to observe children at different stages of development will be provided.

EDU 1140 Working with the Young Child 5 3-9 6-8

An introduction to the relationship of developmental stages to behavior patterns, with emphasis on those methods of interacting with children which promote healthy progress from one developmental stage to the next. Discussions and assignments are designed to develop insight into the student's own attitudes and biases, as a basis for self-understanding and increased capacity for relating to children and adults effectively.

EDU 1145 Working with the Young Child with Problems 5 3-9* 6-8

Further study of behavior in relation to developmental stages, with emphasis on behavior which is symptomatic of emotional or physical handicaps. Case studies and field observations are utilized for analysis of problems commonly encountered in group situations. Effective interaction and other types of remedial help are explored. Behavior of the child care worker is analyzed as a possible factor in contributing to or alleviating maladjustment, with focus on the importance of constructively utilizing an analytic approach to self-development and to improved interpersonal skills.

EDU 1015 Group Care of Infants 3 6 5

Study of development from birth to age three and of the problems specific to group care of children under three. Each student will develop a plan to care for a group of five children; the plan must reflect concern for the child's total development and show procedures for dealing with the practical problems of providing safe care for infants and toddlers.

EDU 1149 Administration and Supervision in a Preschool Facility
3 2 4

Designed to assist students to develop a philosophy of preschool education which can serve as a guide in establishing policies and procedures for the operation of a center for group care of young children. Emphasis is given to principles of supervision and techniques for promoting acceptance of a philosophy by the total staff.

EDU 1150 Seminar-Practicum in Early Childhood Education 4 6-15 6-9*

Advanced program of supervised practice in the care and education of young children.

ELECTRONICS (ELN)

ELN 101 Electronic Instruments and Measurements 1 4 or 6 3

A study of basic electronic instruments, their theory of operation, function, tolerances, and calibration. Both service and laboratory instruments will be studied. Laboratory experience will provide application of each type instrument studied.
Prerequisite: ELC 102.

ELN 105 Control Devices 5 4 or 6 7

A study in depth of the electrical characteristics of vacuum tubes and transistors. Basic parameters and applications of each type device to the three configurations of a three terminal two port system will be included.
Prerequisite: ELC 102.

ELN 110 Introduction to Electronics 3 0 3

An overview of the field of electronics and its interrelation to other scientific fields. Electrical, electronic, and electromechanical devices and their schematic representations are covered. Includes demonstrations, current films, and field trips to local industries.
Prerequisite: None.

ELN 205 Applications of Vacuum Tubes and Transistors 5 4 or 6 7

Practical applications of vacuum tubes and transistors to basic audio amplifiers, radio frequency amplifiers, detectors, modulators and ocsillators.
Prerequisite: ELN 105.

ELN 208 Solid State Thin Film Devices 5 2 6

A study of the processes by which thin-film and semiconductor circuits are fabricated. Oxide isolation and metal-oxide-semiconductor field-effect transistors are covered at length.

Various types of applications are presented such as, logic networks, the computer-on-a-slice concept, the use of feedback in integrated circuits, tuned integrated circuits, thin-film thermollectrics, and microwave applications of integrated-circuit techniques.
Prerequisite: CHM 111.

ELN 210 Semiconductor Circuit Analysis 5 2 or 3 6

A study in some depth of the analysis and design of transistor circuits. Network theorems and equivalent circuits are used extensively in evaluating total circuit performance. Device peculiarities and limitations pertinent to reliable operations are considered. H. Y. Z. and T, parameters are employed as well as signal-flow graphs.
Prerequisite: ELN 105.

ELN 214 Wave Shaping and Pulse Circuits 2 2 or 3 3

Broadband amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, chopper amplifiers, clipper and clamper circuits.
Prerequisites: ELN 105, MAT 103.

ELN 215 Wave Shaping and Pulse Circuits 2 2 or 3 3

Pulse techniques, diode switches, gates, step-counters, restorers and other specific circuits which function as switches.
Prerequisite: ELN 214.

ELN 220 Electronic Systems 5 4 or 6 7

A block diagram course investigating numerous electronic systems. Modules, or blocks of various circuits already studied are arranged in various manners to produce complex systems. Systems will be explained and reduced to functions and then to block diagrams. AM, FM, and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated systems, computers, telemetry, navigational systems, sonar and radar will be considered.
Corequisite: ELN 215.

ELN 225 Transmission and Propagation 3 0 3

An introduction to the electromagnetic radiation, principles of antenna, radiation patterns and field strength. The characteristics and use of transmission lines in radio frequency application. Factors involved in propagation, ground waves, reflections, sky waves, atmospheric effects, ionosphere, fading, noise, static, wire radiators, directive gain, effect of ground impedance, antenna systems and arrays.
Prerequisite: ELN 105.
Corequisite: ELN 205.

ELN 227 UHF and Microwave Systems 5 4 7

A study of UHF and VHF components, circuits, and measurement techniques. The use of distributed constant elements, waveguides and coaxial cables, microwave links, high frequency oscillators, magnetrons, klystrons, traveling wave tubes. An introduction to the use of the Smith Chart.
Prerequisite: ELN 225.

ELN 230 Television Systems 4 6 7

A study of the principles of television including the television system, camera tubes, scanning and synchronization, composite video signal, receiver circuits, transmitting equipment, color television, and closed-loop systems.
Corequisite: ELN 214.

ELN 235 Industrial Instrumentation 4 6 7

Broad introduction to use of industrial electro-mechanical and electronic circuits and equipment. Provides an understanding of the methods, techniques, and skills required for installation, service and operation of a variety of industrial control systems. Analysis of sensing devices for detecting changes in pressure, temperature, humidity, sound, light, electricity, the associated circuitry and indicating and recording devices.
Prerequisites: ELN 205, PHY 104.

ELN 240 Digital Computers 3 0 3

An exploration into the methodology of counting and computing. Various computer techniques will be investigated including: non-sinusoidal waveforms, binary and decade counters, industrial counters, readout devices, logic circuits, arithmetic circuits, storage devices, input-output devices, computer control, analog and digital converters.
Prerequisite: ELN 214.

ELN 245 Electronic Design Project 0 4 2

Students are required to design and construct a project approved by the instructor. Includes selection of project, design, construction, and testing of completed project. Projects may include: AM or FM transmitters or receivers, amplifiers, test equipment, control devices, simple counters, lasers, masers, etc.
Prerequisite: ELN 205.

ENGLISH (ENG)

ENG 101 Composition I 3 0 3

The study and practice of basic elements of effective essay writing through an expository approach. Principles of grammar, and punctuation are emphasized through a functional approach.
Prerequisite: Successful score on English placement test.

ENG 102 Composition II 3 0 3

A continuation of ENG 101, based on interpretative reading. Through an analytical approach the novel is introduced as another form of writing. Techniques for writing a research paper are utilized.
Prerequisite: ENG 101.

ENG 103 Report Writing 2 2 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. The course will include lectures on major types of reports, independent study and investigation supervised by a department representative and the ENG 103 instructor, and, after a review of the report(s) by a department representative, an oral presentation and interaction-evaluation by students and instructors. In addition, a review of some major types of business correspondence will be made.
Prerequisite: ENG 102.

ENG 204 Oral Communication 3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention is given to conducting meetings, conferences, and interviews.
Prerequisite: ENG 101.

ENG 206 Business Communication 3 0 3

Develop skills in techniques in writing business communications. Business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, orders, acknowledgments, remittances, and inquiry.
Prerequisite: ENG 102.

ENG 208 Reading Enrichment 3 0 3

This course is designed to guide the student in a better understanding and a greater appreciation of our literary heritage.

In general, selected poetry, short stories, plays, and the novel will be studied.

Emphasis will be given to some of the influential and outstanding writers and their contributions.
Prerequisites: None.

ENG 210 Advanced Writing 3 0 3

This course is designed for students who show potential and are interested in further pursuing writing skills.

Specialized techniques other than those used in general composition will be used with special emphasis given to fiction.

Other genres will be covered according to student interest.
Prerequisite: ENG 103, and permission of the instructor.

ENG 212 Journalism I 2 2 3

A course offering practical experience in newspaper production in connection with the publication of the school newspaper and other publications. Interviewing, reporting, and editing will be covered with some emphasis being given to layout procedures. Students interested in photography will have an opportunity to utilize this media.
Prerequisite: ENG 102.

ENG 1101 Reading Improvement 2 0 2

This course is designed to improve the student's ability to read more rapidly and accurately. Special emphasis is put on vocabulary, study habits, comprehension, and techniques.

ENG 1102 Communication Skills 3 0 3

Designed to promote effective communication through correct language usage in speaking and writing.

ENG 1103 Report Writing 3 0 3

Fundamentals of correct language usage applied to report writing. Emphasis is on principles of report construction and application to various report forms.
Prerequisite: ENG 1102.

ENG 1105 Written Communications 3 0 3

Develops skills and techniques of writing communications including memos, committee reports, minutes of meetings, letters involving credit, collections, adjustments, complaints, recall, orders, acknowledgements, remittances, inquiry, patient discontinuing treatment, patient beginning treatment, concerning broken appointment, confirmation and goodwill (thank you, congratulatory, sympathy). The student will also develop skill in compiling, composing and submitting articles for publication in professional papers and journals.
Prerequisite: ENG 1102.

ENG 1115 Technical Communication 3 0 3

A basic course in report writing, speaking, and listening. A thorough study of industrial requirements for technical writing.
Prerequisite: None.

FIRE SCIENCE (FIP)

FIP 101 Introduction to Fire Protection Hazards 3 0 3

History and development of fire service, safety and security movements. The role of the fire service, protection and safety personnel. Ancillary organizations. Identification of general fire hazards and their causes and the application of fire protection principles to them.
Prerequisite: None.

FIP 102 Municipal Fire Protection 3 0 3

Fire department organization, personnel management, and the department's relationship with other city departments. Evaluation of public fire protection needs, financial factors, records and reports, equipment procurement policies, apparatus, tools, training needs and programs, maintenance needs and facilities, and other equipment necessary for modern fire protection.
Prerequisite: FIP 101.

FIP 103 Construction Codes and Material Rating 2 2 3

A thorough study of building codes applicable to fire prevention, and principles and practices used in various types of building construction. Fire resistance tests and ratings of building materials.
Prerequisite: FIP 101.

FIP 105 Applied Electricity for Fire Protection 3 2 4

A thorough study of methods and means of utilizing electricity to provide power. The installation and maintenance of electric circuit and machinery.
Prerequisite: None.

FIP 115 Fire Prevention Programs 3 0 3

Principles and application of fire prevention related to the community and industrial plants. The development and maintenance of fire prevention programs, educational programs, and inspection programs. Specific applications of related disciplines to fire prevention problems.
Prerequisite: None.

FIP 120 Municipal Finance 5 0 5

Municipal finance based on sound government principles and practice. A study of budget items, preparation of budget, justifying budgets, financial statements, cost accounting and record systems, taxation and audits.
Prerequisite: None.

FIP 135 Training Programs and Methods of Instruction 3 0 3

Purposes of fire service drills and training programs. The development and operation of the departments' training programs. Facilities and equipment necessary for modern training. Selecting and training the instructional staff. Suitable methods of instruction.
Prerequisite: FIP 115.

FIP 201 Fire Detection and Investigation 3 0 3

Determination of cause of accidental and incendiary fire, fire losses and loss of records, points of origin, location and preservation of physical evidence, and scientific aid to investigation. Courtroom procedure in presenting evidence. Motives and methods for fire setting and investigative methods are covered.
Prerequisite: None.

FIP 205 Industrial Hazards 3 2 4

A study of hazardous processes in industries such as petroleum, furniture, chemical, tobacco, metal, and textile, and the protection and precautions needed for personnel and property safety. Hazards that are related to heating plants, electrical systems, and storage in all industries.
Prerequisite: FIP 101.

FIP 208 Municipal Public Relations 3 0 3

A general survey of municipal public relations and their effect on the government process. Principles of public relations such as planning, staffing, controlling and directing information to the general public is studied. Emphasis is placed upon personal responsibilities, means of communications, policies and organization of an effective public relations program.
Prerequisite: None.

FIP 211 Grading of Fire Defenses 3 0 3

Insurance grading schedules and their principles of application. Methods of analyzing fire hazards and the effects of fire hazards on fire insurance rates. A study of the National Board Grading Schedule is made in detail with other schedules covered briefly.
Prerequisite: Consent of advisor.

FIP 216 Chemical & Radiation Hazards 3 2 4

Intensive study and analysis of the special hazards encountered in the chemical and petroleum industries. Radiation hazards, effects of radiation on humans, exposure control, radiological instruments, operational and decontamination procedures, common uses of radioactive materials, transportation, storage, application of special inspection procedures.
Prerequisite: FIP 218, FIP 101.

FIP 218 Chemistry of Hazardous Materials 3 2 4

Theories of combustion and extinguishment, including the analysis of flammable materials and the nature of extinguishing agents. The properties of matter affecting fire behavior. The application of the laws and principles of chemistry and physics to the use, storage, and disposal of flammable liquids, solids, gases and dusts.
Prerequisite: CHM 101.

FIP 220 Fire Fighting Strategy 3 2 3

The aspects of tactics and strategy in extinguishing fires. Pre-fire plans, mutual aid problems, techniques of using available equipment and manpower, conflagrations, techniques of predicting fires by fuel analysis. Emphasis will be on developing thinking skill in relation to crises.
Prerequisite: FIP 102.

FIP 225 Fire Protection Law 3 0 3

A study of law in relation to fire protection. Torts, Terms and Contracts studied by case method. Liability of fire protection personnel when making inspections, recommendations, fighting fires, and other tasks. Pertinent laws, ordinances, and codes and the responsibilities and powers of the individual or organization concerning enforcement.
Prerequisite: FIP 102.

FIP 226 Industrial Safety 3 0 3

A fundamental study of industrial safety records, development of safeguards, accident costs, and causes, job safety analysis, plants designed for safety, and safety maintenance. Methods of eliminating hazards including color coding, guards, and personal protective equipment. A study of the precautions and safeguards essential to protecting lives during fires in various types of occupancies. Exit code requirements, personnel protective devices, and practical safeguards will be studied. Review of case histories of fires and explosions which have resulted in loss of life to determine how these types of tragedies can be prevented.
Prerequisite: FIP 101.

FIP 230 Hydraulics and Water Distributive Systems 3 2 4

Mechanics of the flow of fluids through fire hose, nozzles, and appliances, pumps, standpipes, watermains, and other devices. Design, testing, and use of nozzles and appliances, pumps, and water distribution systems. Measurement of fluid flow and methods of determining quantities of water available from a distribution system. Practical applications of principles.
Prerequisites: MAT 101. PHY 101.

FIP 231 Sprinkler and Standpipe Systems 3 2 4

Types of sprinkler and standpipe systems, system devices and their operation, advantages of sprinkler systems, codes governing installation, water supply requirements testing, inspection, and maintenance.
Prerequisite: FIP 230.

FIP 235 Inspection Principles and Practices 3 4 5

A study of the fundamentals of fire inspections including standards, techniques of evaluation of hazards as to degree of the hazard and practical recommendations. Reports including maps and sketches of each building inspected. On-the-site inspections of buildings to locate hazards and to recommend safe practices and improvements.
Prerequisite: FIP 103, DFT 118.

FIP 240 Multiple Line Insurance & Rating Schedules 4 0 4

A study of multiple line insurance, types of policies, selection, rate making, settlement of claims, handling of risks, and self-insurance. Types of rating schedules including the analytic and mercantile schedule. Methods of determining fire rating classification.
Prerequisite: FIP 211.

FIP 245 Automatic Alarm and Extinguishing Systems 3 2 4

A study of the types of fixed extinguishing systems, standard and special fire alarm and fire detection systems; their operation, installation requirements, testing, inspection, and maintenance.
Prerequisite: FIP 105.

INDUSTRIAL SCIENCES (ISC)

ISC 102 Industrial Safety 3 0 3

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment; state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance carrier and the Insurance Rating Bureau; and advertising and promoting a good safety and fire prevention program.
Prerequisite: None.

ISC 120 Principles of Industrial Management 3 2 4

The basic managerial decisions; organizational structure including plant location, building requirements, and internal factory organization; problems of factory operation and control, planning, scheduling, routing factory production, stores control, labor control, purchasing, cost control. Plant problems are utilized as lab experiments.
Prerequisite: None.

ISC 201 Industrial Organization and Management 3 0 3

Organizational structure for industrial management; operational and financial activities, including accounting budgeting, banking, credit and industrial risk, forecasting of markets, selection and layout of physical facilities; selection, training and supervision of personnel as found in typical industrial organizations.
Prerequisite: None.

ISC 202 Quality Control 3 2 4

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance.
Prerequisite: None.

ISC 203 Motion Study 3 2 4

Types of methods studies and their applications. Process charts, analysis sheets, time study, work simplification, skill and effort rating.
Prerequisite: None.

ISC 204 Value Analysis 3 0 3

The modern concept in the control of manufacturing production. This course will provide the students an opportunity to study a production system with the specific purpose of identifying unnecessary costs. The objective of the concepts and techniques of value analysis is to make possible a degree of effectiveness in *identifying* and *removing* unnecessary cost by the use of sound decisions through a common sense approach.
Prerequisite: None.

ISC 210 Job Analysis and Evaluation 3 2 4

This study is based on product studies as well as personnel and wage program. The course utilizes the study of product design, value analysis, materials and processes as an intricate part of productive procedures.

ISC 211 Work Measurement 3 2 4

Principles of work simplification including administration of job methods improvement, motion study fundamentals and time study techniques. Use of flow and process charts; multiple activity charts, operation charts, flow diagrams and methods evaluation.
Prerequisite: ISC 210.

ISC 220 Management Problems 3 0 3

A study of personnel and production problems from the standpoint of the executive. Includes selection and development of products, control problems and techniques, development of standards, employee-employer relations, developing the executive staff. Cost sudies are utilized.
Prerequisite: ISC 120.

ISC 230 Materials Handling I 3 2 4

Day-to-day plant direction; forecasting, product planning and control, scheduling, dispatching, routing, and inventory control. A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs.
Prerequisites: MEC 112, DFT 102.

ISC 231 Materials Handling II 1 6 4

A continuation of Materials Handling I with emphasis on practical in-plant problems.
Prerequisite: ISC 230.

MATHEMATICS (MAT)

MAT 101 Technical Mathematics 5 0 5

The complex number system is developed as a super-set generated by fundamental operations on the natural number set. Fundamental algebraic operations, linear equations, rectangular coordinates, analytic geometry of a line systems of linear equations, quadratic equations and scientific notation are introduced. Topics are taught in a manner which allows the student to use them in practical application.
Prerequisite: Satisfactory evidence that admission requirements have been met.

MAT 102 Technical Mathematics 5 0 5

MAT 102 is a continuation of MAT 101. Advanced algebraic and trigonometric topics are studied in depth. Topics included are: quadratic and higher degree equations, roots, synthetic substitution, remainder and factor theorems, logarithmic and exponential functions and solutions of equations containing them, progressions, binomial expansions, complex numbers, solution of oblique triangles, the general sine function, and the graphs of trigonometric functions.
Prerequisite MAT 101.

MAT 103 Technical Mathematics 5 0 5

The fundamental concepts of analytic geometry and differential and integral calculus are introduced. Topics included are the conic sections and the general quadratic in two variables, limits, derivatives, differentials, and indefinite and definite integrals of algebraic functions.
Prerequiste: MAT 102.

MAT 110 Business Mathematics 5 0 5

This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business.
Prerequisite: None.

MAT 112 Business Mathematics for Data Processing 5 0 5

This is a course in Business Mathematics especially adapted to meet the needs of those students who have chosen the Business Data Processing option. It includes a study of the basic arithmetic methods of business calculations, record keeping, and problem solving. The mathematics necessary for a study of accounting is covered. In addition, some insight into the understanding and use of more advance topics such as exponential and logarithmic functions, as applied to business, is introduced.
Prerequisite: MAT 101.

MAT 131 Elementary Technical Mathematics I 3 4 5

Included topics are Practical Number Systems, The Notions of Variables and Functions, Basic Algebraic Operations, Laws of Exponents and Radicals, and Equations and Formulas. Topics are taught in a manner which promotes their use in practical application.
Prerequisite: MAT 1102 or equivalent.

MAT 132 Elementary Technical Mathematics II 3 4 5

A continuation of MAT 131 which includes the topics Scientific Notation and Slide Rule Computations, Linear Equations, Proportion and Variation, Systems of Linear Equations, and Right Triangle Trigonometry.
Prerequisite: MAT 131.

MAT 201 Technical Mathematics 5 0 5

A continuation of MAT 103. More advanced concepts of differentiation and integration are considered. Included are graphs and derivatives of the trigonometric functions, exponential and logarithmic differentiation and integration, advanced integration techniques, polar equations, and parametric equations.
Prerequisite: MAT 103.

MAT 208 Calculus and Laplace Transforms for Electronics 5 0 5

An investigation of the methods of calculus which are of the most direct use in the study of electronic circuits. Introduction to selected topics from differential equations and Laplace transforms and applications of these methods to the solution of electronic circuit problems.
Prerequisite: ELN 214.

MAT 214 Statistics 5 0 5

The theory of statistics and its applicattion in modern business. Kinds of regularity that exist among random fluctuations. Experience in associating and using mathematical models to interpret physical phenomena and predicting the outcomes of experiments related to practical business problems.
Prerequisite: MAT 101.

MAT 219 Differential Equations 5 0 5

Methods of solving first-order and simple higher order ordinary differential equations and linear differential equations with constant coefficients; solution of differential equations by series; and numerical solutions of differential equations.
Prerequisite: MAT 201.

MAT 230 Boolean Algebra with Computer Applications 5 0 5

This course covers the language, laws, theorems, and equations of Boolean Algebra which, along with truth tables, Karnaugh maps, and logic diagrams will be used to design logic and switching circuits. Arithmetic in radices other than radix ten will be studied so that computer arithmetic problems may be understood. Examples of computer circuitry that may be studied are: encoding and decoding matrices, full adders, detect networks, ones and nines complement circuits, and others.
Prerequisite: MAT 101.

MAT 1101 Fundamentals of Mathematics 5 0 5

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Practice in depth.
Prerequisite: None.

MAT 1102 Algebra 5 0 5

Basic concepts and operations of algebra: historical background of our base-10 number system; algebraic operations: addition, subtraction, multiplication and division; fractions, letter representation, grouping, factoring, ratio and proportions, variation; graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction, substitution, graphing, exponents, logarithms, tables and interpolations.
Prerequisite: None.

MAT 1103 Geometry 3 0 3

Fundamental properties and definitions; plane and solid geometric figures, selected

general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations.
Prerequisite: None.

MAT 1104 Trigonometry *3* *0* *3*

Trigonometric rations; solving problems with right angles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems.
Prerequisite: MAT 1103.

MAT 1123 Machinist Mathematics *3* *0* *3*

Introduces gear ratio, lead screw and indexing problems with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems; concludes with an introduction to compound angle problems.
Prerequisite: MAT 1104.

MECHANICAL (MEC)

MEC 101 Machine Processes *0* *6°* *2*

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.

MEC 102 Machine Processes *0* *6°* *2*

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice. Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed.
Prerequisite: MEC 101.

MEC 111 Manufacturing Processes *3* *3** *4*

A survey of manufacturing processes, machines, tools, and devices with regard to their capabilities, capacities, tolerances, finishes, etc. Product design, materials utilized, engineering nomenclature, and common terminology will be discussed.
Prerequisite: None.

MEC 112 Manufacturing Processes *3* *3** *4*

Process planning of operation sequences for efficient production, tool planning, and estimating. An introduction to metallurgy as well as characteristics of non-metallic materials.
Prerequisite: MEC 111.

MEC 116 Engineering Materials *3* *0* *3*

Study and testing of the properties of ferrous and non-ferrous metals and plastics, load and strain measurements, behavior of materials under load, qualities other than strength and control of the properties of the materials.
Prerequisite: PHY 102.

MEC 205 Strength of Materials 3 2 4

Study of principles and analysis of stresses which occur within machine and structure elements subjected to various types of loads such as static, impact, varying and dynamic. Analyses of these stresses are made as applied to thin-walled cylinder and spheres, riveted and welded joints, beams, columns and machine components.
Prerequisite: PHY 106.

MEC 210 Physical Metallurgy 3 3° 4

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) structures, methods of designing crystal planes, liquid and vapor phases, phase diagrams, and alloy systems.
Prerequisites: PHY 101, CHM 111.

MEC 211 Physical Metallurgy 3 3° 4

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization, recrystallization and grain growth, age hardening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations.
Prerequisite: MEC 210.

MEC 213 Production Planning 3 3° 4

Day-to-day plant direction; forecasting, product planning and control, scheduling, dispatching, routing, and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. Drafting room layouts for planning and control.
Prerequisite: DFT 102.

MEC 217 Engineering Materials and Processes 3 3 4

An introductory study of the common materials used in engineering, such as woods, metals, concrete, plastics, etc., and the related physical testing to determine their properties and strengths. Emphasis is placed upon problem-solving and engineering application.
Prerequisites: PHY 102, MEC 102.

MEC 235 Hydraulics and Pneumatics 3 3° 4

Th basic theories of hydraulic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs.
Prerequisite: PHY 102.

MEC 237 Control Systems 2 4 4

Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance, accuracy, applications and their utilization in industrial processes.
Prerequisite: PHY 102.

MEC 1054 Gages and Templates 1 5* 3

A study designed to familiarize the student with methods and procedures of gauging using specialized gages and measuring instruments in template manufacture.
Prerequisite: MEC 1501.

MEC 1101 Machine Shop Theory and Practice 3 10° 6

An introduction to the machinist trade and the potential it holds for craftsman. Deals

primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice.
Prerequisite: None.

MEC 1102 Machine Shop Theory and Practice 3 10° 6

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations of the cylindral grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course.
Prerequisite: MEC 1101.

MEC 1103 Machine Shop Theory and Practice 3 10° 6

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder.
Prerequisite: MEC 1102.

MEC 1104 Machine Shop Theory and Practice 3 10° 6

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry.
Prerequisite: MEC 1103.

MEC 1113 Shop Process 2 3 3

Study of practices used in metalworking shops; introduction to how materials can be utilized, and to the processes of shaping, forming and fabricating of metals. Demonstration of the metalworking lathes, grinders, drills, milling machines, shapers, planers, saws, broachers, gear cutting machines and finishing machines. A study of the capabilities of these machines.
Prerequisite: None.

MEC 1114 Shop Processes 2 3 3

Comparison of the unit-production and mass-production systems. Casting, forging and allied processes, welding and sheet metal working processes are demonstrated and discussed. Mass-production methods are studied in relationship to precision dimensional control.
Prerequisite: MEC 1113.

MEC 1115 Treatment of Ferrous Metals 2 3 3

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, cast iron will be topics for study.
Prerequisite: None.

MEC 1116 Treatment of Non-Ferrous Metals 2 3 3

Continuation of the study of physical metallurgy. The non-ferrous metals: bearing metals, (brass, bronze, lead), light metals (aluminum and magnesium), and copper and its alloys are studied. Power metallurgy, titanium, zirconium, indium and vanadium are included in this course.
Prerequisite: MEC 1115.

MEC 1126 Heat Treating Practice 1 3* 2

A working knowledge of the methods of heat treating of small parts, springs, punches, chisels, etc. Trainees will be given the opportunity to acquaint themselves with the equipment and work in both ferrous and non-ferrous metals.
Prerequisite: None.

MEC 1501 Precision Machining 0 9* 3

Advanced operations in the use of machine shop equipment. Much emphasis will be placed on machining close tolerances.
Prerequisite: MEC 1104.

MEC 1502 Jig, Fixture and Die Making 2 9* 5

Develop understanding of principles and work of jigs and fixtures. Sketching, drawing and fabrication of simple jigs, and fixtures as projects. Basic principles of die making will be studied and applied as they relate to projects.
Prerequisite: MEC 1501.

MEC 1504 Model Making 2 8* 5

A course designed to familiarize students with procedures and techniques necessary in model making. Design and design evaluation will be applied to three-dimensional projects.
Prerequisite: MEC 1501 and MEC 1502.

MEC 1505 Mechanisms 2 3* 3

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkage, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears, and gear trains.
Prerequisites: MEC 1516, MAT 1123.

MEC 1508 Cutter Grinding 1 2* 2

Cutter Grinding is designed to familiarize the student with grinding machines, procedures, and applications as they apply to tool maintenance. Stock removal, and cutting speeds and angles will be studied.
Prerequisite: None.

MEC 1515 Manufacturing Processing 4 0 4

A thorough study of the planning of the processes and methods of manufacturing. Assembly line techniques, automation, materials, and efficiency operations will be stressed.
Prerequisite: None.

MEC 1516 Strength of Materials 2 2 3

Strength of Materials is designed to give the student an opportunity to use basic testing equipment and acquire a working relation to basic stresses and strength of materials.
Prerequisite: MAT 1123.

MEC 1540 Machine Repair 2 6* 4

A basic course in preventive maintenance and repair of metal working machines. A study will be made of basic electric and hydraulic systems commonly used. Actual repair of machines will be undertaken in the classes.
Prerequisite: PHY 1102.

MEC 1541 Machine Repair II 0 3* 1

A continuation of MEC 1540.
Prerequisite: MEC 1540.

MEC 1542 Machine Repair III 0 3* 1

A continuation of MEC 1541.
Prerequisite: MEC 1541.

MEC 1543 Machine Repair IV 0 3* 1

A continuation of MEC 1542.
Prerequisite: MEC 1542.

MEC 1560 Automatic & Semi-Automatic Machinery 3 3* 4

A study of the use and application of automatic and semi-automatic machinery. The theory and methods of modern tape and card-controlled machine tools will be included.
Prerequisite: MEC 1104.

MEC 1700 Design and Manufacturing 4 12* 10

Design and manufacturing will develop the creative ability of the student in designing and building tools and equipment for use in his career in industry. To combine the math, drafting and machining ability acquired in the first seven quarters culminating in a practical tool.
Prerequisites: MEC 1505, MEC 1508, MEC 1516.

PHYSICS (PHY)

PHY 101 Properties of Matter 3 2 4

A self-paced course in physics fundamentals. Basic divisions are systems of units, liquids at rest and in motion, elasticity of solids, liquids, and gases, heat and temperature, thermal expansion, change of phase and heat transfer. Laboratory experiments and specialized problems dealing with these topics are part of this course.
Prerequisite: MAT 101.

PHY 102 Work, Energy and Power 3 2 4

A self-paced course concentrating on work, energy and power. Basic divisions are vector quantities, systems of forces, torque and equilibrium, linear motion, force and motion, work and energy momentum, uniform circular motion and gravitation, and rotational motion. Laboratory experiments and specialized problems dealing with these topics are part of this course.
Prerequisites: MAT 102, PHY 101.

PHY 103 Electricity 3 2 4

Basic theories of electricity, types of electricity, methods of production, and transmis-

sion and transforming of electricity. Electron theory, electricity by chemical action, electrictly by friction, electricity by magnetism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course.
Prerequisites: MAT 102, PHY 102.

PHY 104 Light and Sound 3 2 4

A survey of the concepts involving wave motion leads to a study of sound, its generation, transmission and detection. The principles of wave motion also serves as an introduction to a study of light, illumination and the principles involved in optical instruments. Application is stressed throughout.
Prerequisites: MAT 102, PHY 102.

PHY 106 Applied Mechanics 5 0 5

Concepts and principles of statics and dynamics. Parallel concurrent and noncurrent force systems in coplanar and noncoplanar situation. Concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and motion.
Prerequisites: MAT 102, PHY 102.

PHY 131 Matter and Energy 3 2 4

A fundamental course with a balance between theory and practice but emphasizing applications. The material to be covered is Structure of Matter; Properties of Solids, Liquids and Gases; Temperature and the Effects of Heat; Heat and Change of State; Heat Transfer; Force and Motion; Work, Energy and Power; Basic Machines; and Power Transmission.
Prerequisite: PHY 1102.

PHY 132 Electricity & Magnetism 3 2 4

A specialized course in electricity and magnetism emphasizing applications. The material to be covered is Magnetism and Electrostatics; Basic Electric Circuits; Sources and Effects of Electric Current; Electro-magnetism; Alternating Current; Generators and Motors; and Production and Distribution of Electric Power.
Prerequisite: PHY 131.

PHY 231 Fluid Mechanics 3 0 3

Fundamental laws of fluid flow and application of these laws to the sizing of hot and cold water piping, steam piping, refrigerant piping, air ducts, pumps, and fans. Particular emphasis will be directed to calculations of capacity, horsepower, and head requirements of pumps and fans; to comparison of the several methods of piping and air duct sizing; and to methods of fluid flow measurement.
Prerequisites: MAT 103, PHY 102.

PHY 1101 Applied Science 3 2 4

An introduction to physical principles and their application in industry.

Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles.

PHY 1102 Applied Science 3 2 4

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power.
Prerequisite: PHY 1101.

POLITICAL SCIENCE (POL)

POL 201 United States Government 3 0 3

A study of government with emphasis on basic concepts, structure, powers, procedures and problems.
Prerequisite: None.

POWER MECHANICS (PME)

PME 1101 Internal Combustion Engine 3 12° 7

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engineers. Testing of engine performance; servicing and maintenance of pistons, valves, cams and camshafts, fuel and exhaust systems, cooling systems; proper lubrication; and methods of testing, diagnosing and repairing.

PME 1102 Automotive Fuel and Electrical Systems 5 12° 9

A thorough study of the fuel and electrical systems of the automobile. Fuel pumps, carburetors, fuel injectors, types of fuel systems and the characteristics of fuels are studied. The battery, starting system, generating system, accessories and wiring are taken up the latter part of the quarter, as well as the use of special tools and test equipment for fuel and electrical systems.

PME 1103 Engine Ignition Systems 3 3 4

A study of the principles and functions of the various ignition components including the transisterized ignition system. Instruction in repairing and adjusting ignition systems. Units to be studied will be ignition coils, distrbutors, spark plugs and connecting wiring plus the use of testing equipment to analyze ignition problems.

PME 1240 Advanced Automotive Electrical Systems I 5 15° 10

A thorough study of the theory and operation of various automobile electrical units and systems. Maintenance and testing procedures, diagnosis and repair of all types of electrical/electronic components, especially the transistor circuits, found on the modern automobile.

PME 1250 Advanced Auto Fuel Systems 5 12° 9

A thorough study of the fuel systems of the automobile. Fuel pumps, carburetors, and fuel injectors. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel system. Exhaust and emission controls and servicing.

PRACTICAL NURSING (PNE)

PNE 1001 Fundamentals of Health 2 0 0 2

This course is a study of total health and health habits and their effect on the individual, the family, and the environment in which they live. The study of health resources available to all persons and selected agencies that may be visited for special learning.
Prerequisite: None.

PNE 1002 Basic Sciences 6 4 0 8

This course is designed to give the student an understanding and appreciation of basic science principles and their relationship to practical nursing. The course includes study of the structure and functions of the systems of the body, the basic principles of nutrition, and selected learning of Microbiology as related to the prevention of diseases, promotion of health, and the nurse's responsibilities in protecting the patients and others from illness and/or infections.
Prerequisite: None.

PNE 1003 Fundamentals of Practical Nursing 4 8 0 8

Designed to assist the beginning Practical Nurse student in acquiring knowledge basic to the development of skills needed for safe and effective bedside nursing care.
Prerequisite: None.

PNE 1004 Clinical Experience I 0 0 21 7

Beginning experiences in a general hospital under supervision of clinical instructors with opportunity to apply principles and practice skills learned in the laboratory, and understanding of the students' role on the nursing team.
Corequisites: PSY 1101, PNE 1001, 1002, 1003.

PNE 1005 Medical-Surgical Nursing I 2 2 0 3

Designed to give the student material basic to the beginning understanding of the nursing care of patients with common problems presented by illness. Processes of illness, diagnostic tests, physiologic reaction to pain, needs of patients with long term illnesses, rehabilitation, pre and post operative needs.
Prerequisite: PNE 1001, 1002, 1003, PSY 1101.

PNE 1006 Maternity Nursing 2 2 0 3

Presentation of modern aspects of material on nursing care during antepartum, labor and postpartum periods. Care of the newborn baby and methods of teaching new mothers. Emphasis is to provide better and safer care for the expectant mother and her baby.
Prerequisites: PNE 1001, 1002, 1003; PSY 1101.

PNE 1007 2 2 0 3

Designed to develop understanding of the scope and aims of modern nursing of children, and methods of answering the needs of the hospitalized child and his parents. Nursing care of children with common disorders and advancing to the care of the more seriously ill child. Emphasis will be on the role of the student on the health team.
Prerequisites: PSY 1101, PNE 1001, 1002, 1003.

PNE 1008 Clinical Experience II 0 0 21 7

Further experience in basic areas of medical, surgical, pediatric and obstetric nursing in rotating groups. Emphasis on observation of signs and symptoms and assuming responsibility in reporting to head nurse.
Prerequisite: PNE 1004.

PNE 1009 Medical-Surgical Nursing II 4 2 0 5

Designed to develop knowledge of common disorders of body systems, the nursing care, socio-psychological implications.
Prerequisite: PNE 1005.

PNE 1011 Clinical Experience III 0 0 21 7

Continued experience in medical-surgical pediatric and maternity nursing with emphasis

on the role as an assistant to the professional nurse in caring for the seriously ill patient in rotating experience.
Prerequisite: PNE 1008.

PNE 1012 Advanced Medical-Surgical Nursing III 4 0 0 4

Continue the study of the nursing needs of the more seriously ill or aging patients with disorders affecting the body systems.
Prerequisite: PNE 1009.

PNE 1013 Mental Health 3 0 0 3

An introduction of mental, emotional and physical reactions caused by illness and hospitalization. Emphasis is placed on the Practical Nurse's role in the care of mentally or emotionally disturbed patient.
Prerequisite: PSY 1101.

PNE 1014 Vocational Adjustment 2 2 0 3

Designed to present further nursing ethics, medical-legal aspects of Practical Nursing, a study of the nursing organizations and the study of work opportunities, and the obligations and responsibilities of the Licensed Practical Nurse as a person, a worker, and a citizen.
Prerequisite: Satisfactory completion of PNE up to this point.

PSYCHOLOGY (PSY)

PSY 108 Psychology of Communications 3 0 3

An examination of basic communications psychology. The course is intended to give the student a rudimentary understanding of some of the basic principles of perception, determinants of attention, information theory, memory, and learning. Emphasis will be placed on applying these principles to the visual communications field and showing the student how best to convey information to identified audiences.

PSY 112 Personality Development 3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

PSY 206 Applied Psychology 3 0 3

A survey of psychological thinking on the topics of heredity, environment, maturation, learning, motivation, emotion, perception, and personality (normal and abnormal). Emphasis is placed on the application of knowledge to work and life situations.
Prerequisite: None.

PSY 213 Advanced Psychology 3 0 3

An expansion of the topics surveyed in Applied Psychology, PSY 206.
Prerequisite PSY 206.

PSY 221 Psychology of Color 3 0 3

A study of color, the conscious and subconscious response to combination of colors as applied to visual communications.
Prerequisite: None.

PSY 1101 Human Relations 3 0 3

A study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships with the work situation.
Prerequisite: None.

PSY 1112 Personality Development 3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

SOCIAL SCIENCES

SSC 201 Social Science 3 0 3

An investigation into the basic concepts of sociology. Topics considered are sociological methods, the nature and meaning of culture, personality and socialization, role and status, social control, groups and associations, institutions, and the family. Course emphasis is on application of the principles of sociology to the understanding of life and work situations.
Prerequisite: None.

SSC 202 Social Science 3 0 3

An extension of the student's knowledge into the area of sociology, the course includes considerations of social class, social mobility, social processes, social power, race relations, collective behavior, population, community problems, social change, and social movements. The course emphasizes a nonscientific but in-depth analysis of some of the more complex topics in sociology.

SSC 203 Environmental Studies 3 0 3

A study of environmental problems caused by the impact of man and technology upon the natural resources of the earth. Basic ecology and ecosystems are introduced at the beginning. Various causes of pollution are studied and possible solutions discussed. The social, economic and political impact of environmental problems is stressed.

SSC 205 American Institutions 3 0 3

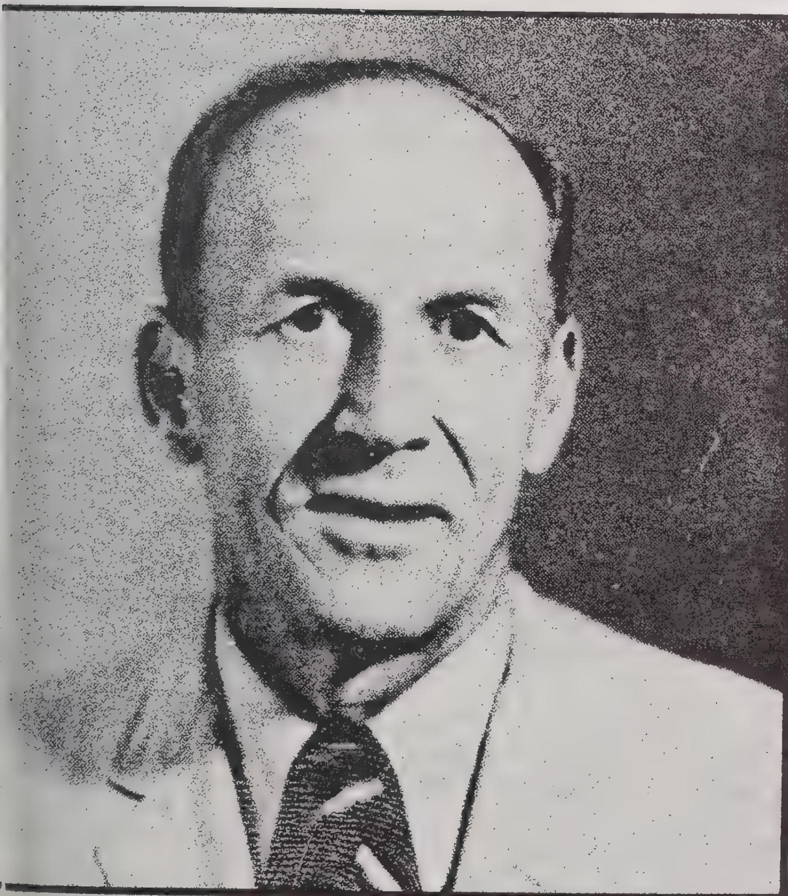
A study of the effect of American social, economic, and political institutions upon the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage.
Prerequisite: None.

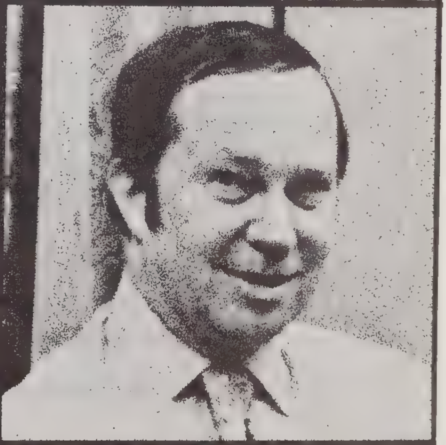
WELDING (WLD)

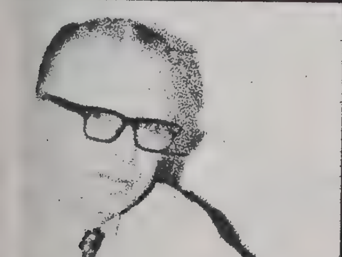
WLD 1101 Basic Gas & Electric Welding 1 3 2

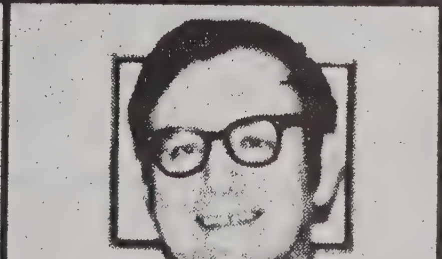
Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding; brazing, silver-soldering, and flame-cutting methods applicable to mechanical repair work using gas welding. Practice in basic electric welding will be given as it applies to simple construction and mechanical repair.
Prerequisite: None.

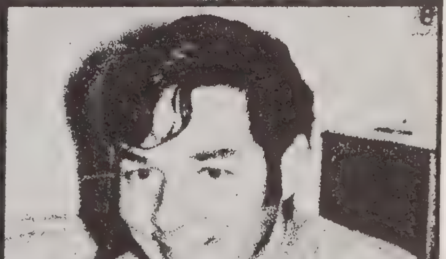
ADMINISTRATION











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Harry B. Heilig, Vice-Chairman
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Sanders and Holt

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Vice President & Assistant
Production Manager
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Industrial Engineer
Burlington Industries, Inc.

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Homemaker

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Sellars Animal Hospital

Elijah Shaw
Welder Operator
Western Electric Co.

Mrs. Byrde Chambers
Senior Citizens Coordinator
ALCAP

ADMINISTRATIVE OFFICERS

William E. Taylor . . . . President

B.S. Eastern Kentucky University, Richmond, Kentucky; M.Ed. University of North Carolina, Greensboro. Additional study at N. C. State University and University of North Carolina-Chapel Hill.

J. Dillon Cherry . . . . Business Manager

B.S. Business Administration; East Carolina University; additional study at University of Nebraska.

Paul C. Davis . . . . Administrative Assistant

B.A. English, University of North Carolina-Chapel Hill; M.E., Administration, University of North Carolina-Chapel Hill.

Ray N. Easter . . . . Director, Student Personnel

A.B. Speech, Asbury College; M.Ed., Guidance and Counseling, University of North Carolina-Chapel Hill; additional study at Asbury Theological Seminary, Duke University, North Carolina State University, Iowa University, and California State College at Los Angeles.

Miles L. Eckard . . . . Dean of Instruction

B.S. Math, Appalachian State University; MAT Math and Science, University of North Carolina-Chapel Hill; Ed.D. Community College Administration, North Carolina State University; additional study at East Tennessee State University, Duke University and Texas A&M University.

Terrence Hanner . . . . Registrar

B.S. History, Duke University; additional study at East Carolina University and IBM training schools.

Edgar P. Lynch . . . . Director, Learning Resources Center

B.A., History, Elon College; B.S. Library Science, University of North Carolina-Chapel Hill; M.S. Library Science, University of North Carolina-Chapel Hill; additional study at University of North Carolina-Chapel Hill.

Monroe McVey . . . . Director, Adult Education

B.A. History, Elon College; additional study at Virginia Commonwealth University and University of North Carolina-Greensboro

Jack O'Kelley . . . . Director, Extension

B.S. Winston-Salem State University; M.S. A& T University.

Governor Robert W. Scott . . . . Special Consultant for Development

F. Dave Turnage .... Director, Occupational Education

B.S. Mechanical Engineering, N .C.State University; Professional Degree, N. C. State University

G. Dale Vaughn .... Director, Evening Programs

B.Ed. Industrial Arts, Eastern Illinois University; M.A., Industrial Education, Ohio State University; additional study at University of North Carolina-Greensboro and North Carolina State University.

COUNSELORS

Mrs. Ella Ray Chacey .... Admissions Officer

B.S. Commerce, University of Mississippi; M.Ed., University of North Carolina-Chapel Hill; additional study at University of North Carolina-Chapel Hill. Graduate certification in Guidance and Counseling from N. C. State Dept. of Instruction

Richard E. Davis .... Financial Aid Officer

B.A., Political Science and Comparative Literature, University of N. C.-Chapel Hill; M.Ed., Administration and Guidance Services, University of N.C.-Chapel Hill; additional study at N. C. State University, Appalachian State University, Tulane University, Graduate certification by N. C. State Dept. of Public Instruction as Principal, Counselor, teacher in sciences, social sciences, and English.

Joseph H. Fryar .... Student Activities Coordinator

B.A., French, N. C. Central University, Durham, N. C.; M.A., French, N. C. Central University.

Mrs. Joann McIntyre .... Job Placement

B.S., University of North Carolina, Greensboro
M.Ed., Guidance and
Counseling, UNC-G

Mrs. Louise Greer

B.Ed., Duquesne University
M.Ed., Counseling, William and Mary

STAFF

Mrs. Dorothy Allred .... Secretary, Office of the Registrar

Mrs. Glenda Blue .... Secretary, Director of Occupational Education

STAFF (Continued)

Mrs. Jesse Chatman	Library Assistant
Mrs. Jeanne Diffee	Secretary, Faculty
Mrs. Rosa Flynt	Secretary, Adult Education and Extension
Mrs. Ruby Grant	Receptionist
Mrs. Pam Hatch	Secretary, Evening Director
Mrs. Jerri Holloway	Secretary, Student Personnel Services
Mrs. Dot Johnson	Accounting Clerk
Mr. Samuel H. Jones	Maintenance
Mrs. Ruth King	Instructional Materials Clerk
Mrs. Effie Lambert	Bookkeeper
Mrs. Nancy Leach	Secretary, Business Manager
Mr. Alfred M. Leath	Maintenance
Mrs. Edith Lougee	Student Concession Supervisor
Mr. Oscar Miles	Maintenance Supervisor Building and Equipment
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Mrs. Geraldine Nicks	Bookstore Manager

Mrs. Kathy Oliver	Secretary, Learning Resources
Mrs. Pam Poindexter	Secretary, President
Mrs. Delores Qualls	Secretary, Dean of Instruction
Mr. Samuel T. Ratliff	Maintenance
Mrs. Lynn Terrell	Accounting Clerk
Mr. Herman Satterfield	Maintenance
Mr. John Wade	Audio-Visual Technician
Mr. Julian H. Walker	Maintenance
Miss Martha Woods	Office Clerk

THE FACULTY

THE
SECRET OF LIFE
IS TO
REDUCE
YOUR WORRIES
TO A
MINIMUM!
SNOOPY

APPLIED ARTS

Mr. Harry Palmer . . . . Division Chairman
Department Head
Commercial Art

B.A., Art, Richmond Professional Institute; additional study at Georgia State University, Atlanta, Ga., and University of North Carolina-Chapel Hill.

Miss Frances Durant . . . . Commercial Art

Elon College; additional study with Art Students League, New York City, University of North Carolina-Chapel Hill, and participated in the Jr. College European Study Tour through Southern Illinois University.

Mr. Wayne Feamster . . . . Department Head
Audio-Visual Technology

Richmond Professional Institute; additional study at the University of North Carolina-Greensboro, and North Carolina State University.

Mr. Leonard Miller . . . . Department Head
Technical Illustration

A.A.S., Art, Technical Institute of Alamance; additional study at Elon College, George Washington University and Chapman College.

BUSINESS TECHNOLOGIES

Mr. Charles Lowry . . . . Division Chairman

A.B., History, Mercer University, Macon, Georgia; M.Ed., University of North Carolina-Greensboro.

Mrs. Ellen Averitt . . . . Department Head
Secretarial Department

B.A., Business Education, Elon College; additional study at the University of North Carolina-Greensboro.

Mrs. Ruth Brookshire . . . . Secretarial Department

B.S., Business Administration, East Carolina University; A.A., Business Education, Emmanuel College

Mr. Roy Campbell . . . . Business Administration

B.A., Business Administration, Elon College; M.S., Business Management, Virginia Commonwealth University

Mr. Vernon Cheek . . . . Department Head
Business Administration

B.S., Business Administration, Elon College; additional study at the University of North Carolina-Chapel Hill

Mr. Gil Dodson .... Department Head
Data Processing

B.A., Business Administration, Elon College; additional study at North Carolina State University.

Mr. Julius Kimbro .... Data Processing

B.S., Mathematics, North Carolina State University.

Mr. Tom Long .... Business Administration

B.S., Business Administration, University of North Carolina-Chapel Hill; J.D., Duke University

Mrs. Jean McMillan .... Secretarial Department

B.S., Secretarial Administration, University of North Carolina-Greensboro; additional study at the University of North Carolina-Greensboro and North Carolina State University.

Mrs. Wanda Palmer .... Secretarial Department

B.A., English, Carson-Newman College, Jefferson City, Tennessee; additional study at the University of North Carolina-Greensboro.

Mrs. Ruth Wade .... Secretarial Department

B.S., Business Education, North Carolina Central University; M.Ed., Business Education, University of North Carolina-Greensboro.

ENGINEERING TECHNOLOGIES

Mr. Jerry Harris .... Division Chairman

A.A., Agriculture, N.E. Oklahoma A & M College; B.S., Animal Science, Oklahoma State University; M.S., Biochemistry & Nutrition, North Carolina State University; additional study at Duke University and the University of North Carolina-Chapel Hill.

Mr. Pedro Alomia .... Department Head
Air Conditioning and
Refrigeration Technology

Inter-American Trade Scholarship; additional study at the University of North Carolina-Greensboro, North Carolina State, and the Technical Institute of Alamance. Twelve years experience as an air conditioning and refrigeration contractor and repairman.

Miss Cynthia Daugherty .... Chemistry

B.S., Chemistry, Radford College, Radford, Va.; M.S., Chemistry, University of Tennessee.

Mr. James Peeples .... Department Head
Electronics Engineering
Technology

A.A.S., Capitol Institute of Technology; additional study at North Carolina State University.

Mr. Paul Scheetz .... Drafting and Design Technology

B.S. in Voc. Ind. Education from North Carolina State University; additional study at North Carolina State University.

Mr. John Stewart .... Department Head Drafting and Design Technology

A.S., Drafting, Indiana Institute of Technology; additional study at Purdue University, N. C. State University, University of N. C.-Greensboro, University of Illinois, Vocational Teacher Institute, and St. Francis College.

Mr. Ralph Stockard .... Electronics

B.S.E.E., N. C. State University; additional study at N. C. State University and the University of N. C.-Chapel Hill.

HEALTH OCCUPATIONS

Mrs. Ruth Elzey .... Division Chairman

B.A., Nursing, Barrington College, Barrington, Rhode Island; R.N., Sturdy Memorial Hospital School of Nursing.

Mrs. Margaret Hooper .... Dental Assisting

Diploma in Dental Assisting from the Technical Institute of Alamance.

Mrs. Mildred Lynch .... Department Head Dental Assisting

Certified Dental Assistant, University of North Carolina, School of Dentistry.

Mrs. Celia O'Briant .... Child Care

B.A., Sociology, North Carolina State University; M.Ed., Guidance and Personnel Services, North Carolina State University; additional study at North Carolina State University and University of North Carolina-Greensboro. Graduate certification by North Carolina Department of Public Instruction in Counseling.

Mrs. Florence Pate .... Practical Nursing

R.N., Presbyterian-University Pennsylvania Hospital School of Nursing; additional study at Elon College.

MECHANICAL OCCUPATIONS

M. Glenn Klutz . . . . Division Chairman

B.S., Math Education and Electrical Engineering, N. C. State University; M.A., Guidance and Student Personnel, University of Alabama; additional study at N. C. State University and University of N. C.-Greensboro.

Mr. James Newbold . . . . Automotive Mechanics

Mars Hill College; additional training with General Motors and at Rockingham Community College. Twenty-three years experience as auto mechanic.

Mr. David Payne . . . . Air Conditioning and Refrigeration

Diploma, Air Conditioning, Technical Institute of Alamance; Diploma, Auto Mechanics, Technical Institute of Alamance; additional study at Westinghouse Factory school and Elon College.

Mr. Willis Rethaford . . . . Department Head Auto Mechanics

Diploma, Auto Mechanics, Technical Institute of Alamance; additional study at North Carolina State University, Autolite, General Motors, American Motors, Perfect Circle, and Mark IV. Eight years experience as auto mechanic.

Mr. Arthur Sykes . . . . Department Head Machinist Trade

Certificate as Machinist from Western Electric Company; Fifteen years experience as machinist.

RELATED STUDIES

Mr. James Swinney . . . . Division Chairman

B.E.E., North Carolina State University;

additional study at Harvard University, George Washington University, North Carolina State University and the University of North Carolina-Greensboro

Mr. Laurent Changuion . . . . English

Th.B., Theology/Christian Education, Holmes Theological Seminary; B.A. English, Elon College; additional study at Elon College.

Mrs. Betty Jo Maghan . . . . Department Head
Developmental Studies
English
Social Sciences

B.A., English and Social Studies, Wake Forest; M.A., English, Appalachian State University; additional study at University of North Carolina-Chapel Hill and Greensboro.

Mr. Tad Martin . . . . Mathematics

B.S., Math, East Carolina University.

Mrs. Kaye Maves . . . . English

B.M. in Ed., Centenary College of La.; M.A., English, University of Oregon.

Miss Rebecca Smith . . . . English

B.A., English, Berea College, Berea, Kentucky; additional study at University of North Carolina-Chapel Hill.

Mr. Rudy Smith . . . . Department Head
Mathematics Department

B.S., Mathematics, University of North Carolina-Chapel Hill; additional study at the University of North Carolina-Chapel Hill and the Technical Institute of Alamance.

Mr. Joe Canada . . . . Mathematics

A.B., Mathematics, Catawba College.

LEARNING LAB

Mrs. Pearl Lee . . . . Coordinator

B.S., Elementary Education, Winston-Salem University; M.Ed., Speech Pathology and Audiology, University of North Carolina-Greensboro; additional study at Teachers College, Columbia University.

Mr. Robert Graham . . . . Evening Coordinator

B.A., Religion, Elon College; M.Ed. Industrial Education, North Carolina State University; additional study at the University of North Carolina-Greensboro, and Appalachian State University.

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1973

JANUARY

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NOT WRITE IN
THIS COLUMN

PHA NUMBER

62-65
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REQUEST FOR ADMISSION

TECHNICAL INSTITUTE OF ALAMANCE

411 Camp Road, Burlington, North Carolina 27215
Phone 227-7471

PLEASE PRINT ONLY ONE CHARACTER PER BLOCK.

Use appropriate abbreviations to get requested information in blocks provided.
PLEASE PROVIDE ALL INFORMATION REQUESTED.

7-21 LAST NAME

22-31 FIRST NAME

32-41 MIDDLE/MAIDEN NAME

42-44 JR-SR-III, ETC.

45-53 SOCIAL SECURITY NUMBER

54
1 ☐ MALE
2 ☐ FEMALE

55-56 DAY
57-58 MONTH
19 59-60 YEAR
BIRTH DATE

BIRTH PLACE
CITY-COUNTY ____________ STATE ____________

61
1 ☐ WHITE
2 ☐ BLACK
3 ☐ AM IND
4 ☐ OTHER
RACE

NORTH CAROLINA RESIDENT
☐ YES
☐ NO

NORTH CAROLINA COUNTY OR STATE OF RESIDENCY ____________

PERMANENT ADDRESS IS THE ADDRESS OF YOUR PARENTS, GUARDIAN, OR SOMEONE WHO WILL KNOW HOW TO CONTACT YOU AFTER YOU LEAVE TIA.

LOCAL ADDRESS REFERS TO A TEMPORARY ADDRESS YOU WILL BE USING ONLY WHILE AT TIA.

IF YOUR PERMANENT ADDRESS AND LOCAL ADDRESS ARE THE SAME, PLEASE PRINT IT IN BOTH PLACES.

24-43 PERMANENT ADDRESS STREET & NUMBER

44-63 PERMANENT CITY & STATE

64-68 PERM. ZIP

69-75 PHONE PERM.

NEXT OF KIN ____________ RELATIONSHIP ____________

ADDRESS OF NEXT OF KIN ____________ ____________ ____________ ____________
(IF DIFFERENT FROM PERMANENT ADDRESS) STREET & NUMBER CITY & STATE ZIP PHONE

24-43 LOCAL ADDRESS STREET & NUMBER

44-63 LOCAL CITY & STATE

64-68 LOCAL ZIP

69-75 PHONE LOCAL

LAST HIGH SCHOOL ATTENDED

____________ ____________ ____________
HIGH SCHOOL NAME HIGH SCHOOL CITY & STATE HIGH SCHOOL ZIP

DID YOU (OR WILL YOU) GRADUATE? YES ____ YEAR ____________
NO ____ HIGHEST GRADE COMP. ____________
EQUIVALENCY CERTIFICATE ____________

SCHOOL USE ONLY
DO NOT WRITE IN
THIS COLUMN

24-27 ☐☐☐☐ CURR. CODE

28-37 ☐☐☐☐☐☐☐☐☐☐ ADVISOR

38-44 ☐☐☐☐☐☐☐ HIGH SCHOOL CODE

45-46 ☐☐ LAST YEAR ATTENDED

47-50 ☐☐☐☐ STANDING

51-54 ☐☐☐☐ IN CLASS OF

55-61 ☐☐☐☐☐☐☐ COLLEGE CODE

CLASSIF
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2-RF
3-SO

62-65 ☐☐☐☐ BEGAN STOPPED

66 ☐

67 ☐ ATTEND
1-DAY
2-NIGHT

68-70 ☐☐☐ TERM

71 ☐ EMPLOY
1-UN
2-PT
3-PT

80 4 CODE

SCHOOLS OR COLLEGES ATTENDED AFTER LEAVING HIGH SCHOOL, IF ANY

				YEAR ATTENDED FROM	TO
LAST COLLEGE NAME ____	COLLEGE ____	CITY AND STATE	ZIP ____	19____	19____
OTHERS					
____	____		____	19____	19____
____	____		____	19____	19____

HAVE YOU EVER ATTENDED TIA BEFORE? ____ YES ____ NO   LAST TERM ____ QUARTER ____ YEAR   PROGRAM ____

IN WHAT PROGRAM OR FIELD OF STUDY DO YOU PLAN TO ENROLL? ____

DO YOU PLAN TO ATTEND (____ DAY , ____ EVENING) CLASSES?   WHICH QUARTER DO YOU PLAN TO ENROLL? ____ SUMMER ____ WINTER ____ FALL ____ SPRING

WILL YOU BE EMPLOYED WHILE ATTENDING TIA?
1 UNEMPLOYED ____
2 PART-TIME ____ EMPLOYER ____ PHONE NUMBER ____
3 FULL-TIME ____ EMPLOYER'S ADDRESS ____

FINANCIAL AID

WHAT TYPES OF FINANCIAL ASSISTANCE WILL YOU HAVE WHILE ATTENDING TIA?

72 ☐ MANPOWER DEV. & TRAINING
74 ☐ SOCIAL SECURITY BENEFITS
76 ☐ VETERAN'S BENEFITS
78 ☐ OTHER ____
73 ☐ SCHOLARSHIP ____ NAME OF
75 ☐ VOCATIONAL REHABILITATION
77 ☐ WORK STUDY
79 ☐ NONE

DO YOU BELIEVE THAT YOU NEED AND QUALIFY FOR OTHER FINANCIAL AID? IF SO, PLEASE CONTACT FINANCIAL AID OFFICER.

HEALTH INFORMATION

Rate your general health as ☐ Excellent, ☐ Good, ☐ Fair, or ☐ Poor.

Do you have any physical handicaps or requirements that interfere with your studies or work that you might assume, or have you had or do you

	YES	NO		YES	NO		YES	NO
Rheumatic Fever	____	____	High Blood Pressure	____	____	Do you use Crutches or Wheelchair?	____	____
Heart Disease	____	____	Speech Disorders	____	____	Psychiatric Problems	____	____
Diabetes	____	____	Hearing Problems	____	____	Other (Explain) ____		
Epilepsy	____	____	Eye (sight) Problems	____	____	____		

NAME AND ADDRESS OF YOUR REGULAR PHYSICIAN: ____ ____ Telephone Number

IN CASE OF AN EMERGENCY, PERMISSION IS GRANTED TO CALL A PHYSICIAN OTHER THAN THE ABOVE NAMED. ____ YES ____ NO

Are you at present receiving medical care of any sort? ____ If so, please describe and give dates: ____

I understand that I am responsible for having official transcripts of my previous college records, if any, sent directly to the Admissions Officer. Techn of Alamance, 411 Camp Road, Burlington, North Carolina 27215. I certify that I have listed above all schools or colleges attended after high school, if

Date of Application ____   Applicant's Signature ____

IF MARRIED, PRINT NAME BEFORE MARRIAGE HERE: ____

APPLIED ARTS
  Audiovisual Technology
  Commercial Art and Advertising Design
  Technical Illustration

BUSINESS TECHNOLOGIES
  Business Administration
  Business Data Processing
  General Office Technology
  Medical Secretary
  Scientific Data Processing
  Technical Secretary

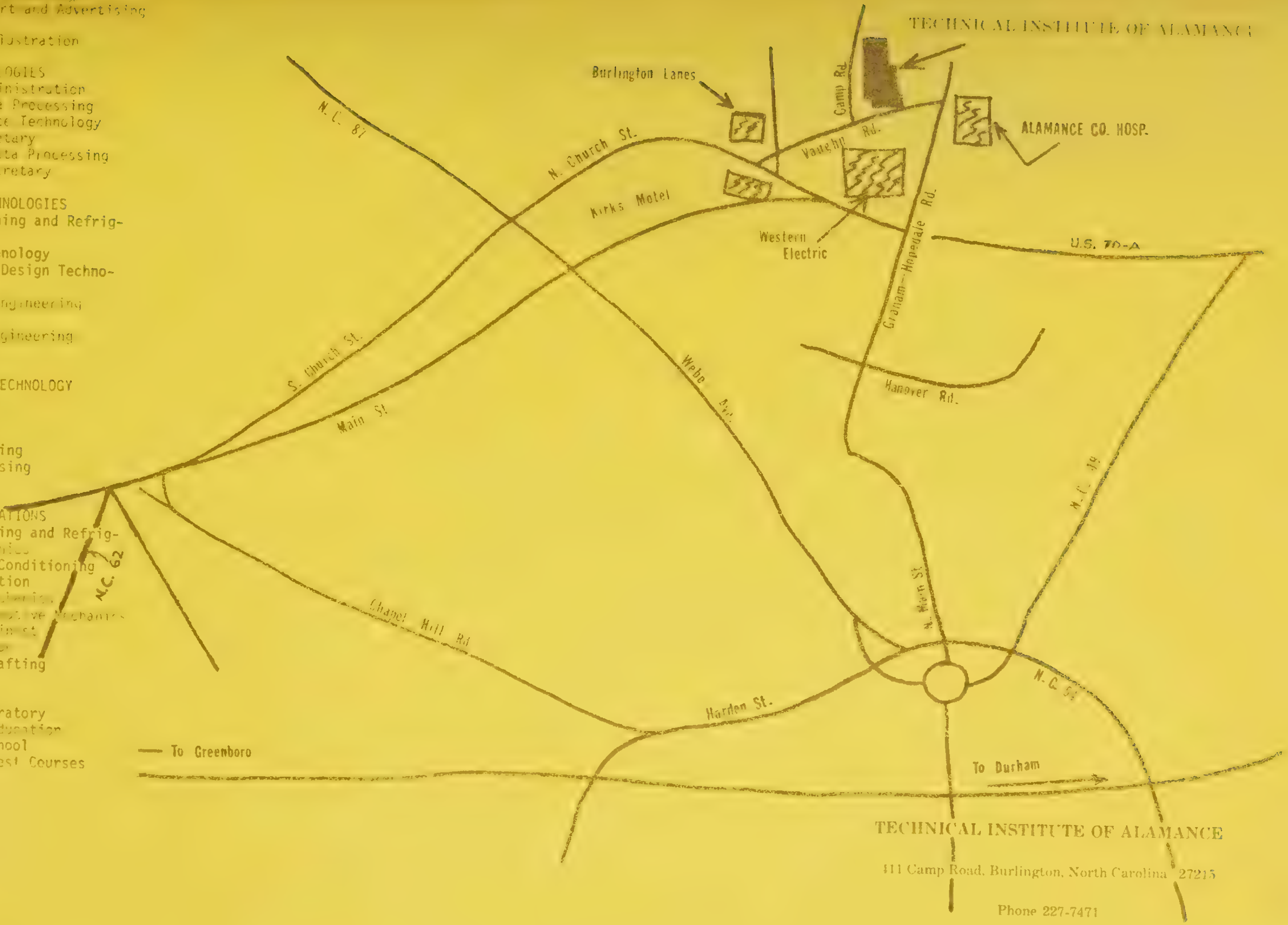
ENGINEERING TECHNOLOGIES
  Air Conditioning and Refrigeration
  Chemical Technology
  Drafting and Design Technology
  Electronics Engineering Technology
  Industrial Engineering Technology

PUBLIC SERVICE TECHNOLOGY
  Fire Science

HUMAN SERVICES
  Dental Assisting
  Practical Nursing
  Child Care

MECHANICAL OCCUPATIONS
  Air Conditioning and Refrigeration Mechanics
  Advanced Air Conditioning and Refrigeration
  Automotive Mechanics
  Advanced Automotive Mechanics
  Advanced Machinist
  Machinist Trade
  Mechanical Drafting

ADULT EDUCATION
  Learning Laboratory
  Adult Basic Education
  Adult High School
  General Interest Courses


TECHNICAL INSTITUTE OF ALAMANCE
Burlington Lanes
Camp Rd.
Vaughn Rd.
ALAMANCE CO. HOSP.
N. C. 87
N. Church St.
Kirks Motel
Western Electric
Graham—Hopedale Rd.
U.S. 70-A
Hanover Rd.
S. Church St.
Main St.
Webb Ave.
N. C. 49
N. Main St.
N.C. 62
Chapel Hill Rd
Harden St.
N. C. 54
To Greenboro
To Durham

TECHNICAL INSTITUTE OF ALAMANCE

111 Camp Road, Burlington, North Carolina 27215

Phone 227-7471

the
technical
institute
of alamance

411 Camp Road/Burlington, N. C. 27215

LIBRARY RATE

MR. GEORGE STEVENSON
NORTH CAROLINA COLLECTION
UNIVERSITY OF NORTH CAROLINA
CHAPEL HILL, NORTH CAROLINA 27514

GENERAL CATALOG

1973 - 1975

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DISCARDED
OCT 29 1973

chnical Institute of Alamance Burlington, North Carolina

Mailing Address	Technical Institute of Alamance 411 Camp Road Burlington, North Carolina 27215
Telephone Number	227-7471 Area Code 919

For prompt handling, inquiries should be addressed to the offices indicated below:

General Information	President
Business Affairs	Business Manager
Admissions Student Information Financial Aid Counseling Services	Director of Student Personnel
Vocational-Technical Programs	Director of Occupational Education
General Adult Education	Director of General Adult Education

Visitors are always welcome at the Technical Institute of Alamance. The Administrative Offices are open Monday through Thursday from 8:00 a.m. to 10:00 p.m. and Friday from 8:00 a.m. to 5:00 p.m. Visitors desiring interviews with members of the staff are urged to make appointments in advance.

GENERAL CATALOG

1973 - 1975

chnical Institute of Alamance Burlington, North Carolina

ACADEMIC CALENDAR

FALL QUARTER 1973 THRU SUMMER QUARTER 1974

FALL QUARTER

Sept. 4	New Student Orientation
Sept. 5	Registration
Sept. 6	Classes Begin
Sept. 12	Last Day to Add a Course
Nov. 21	Classes End
Nov. 22, 23	Thanksgiving Holidays

WINTER QUARTER 1973

Nov. 28	Registration
Nov. 29	Classes Begin
Dec. 5	Last Day to Add a Course
Dec. 21-31 (inc.)	Christmas Holidays
Jan. 1	New Year's Holiday
Feb. 28	Classes End

SPRING QUARTER 1974

Mar. 5	Registration
Mar. 6	Classes Begin
Mar. 12	Last Day to Add a Course
Apr. 12, 15	Easter Holidays
May 23	Classes End

SUMMER QUARTER 1974

May 28	Registration
May 29	Classes Begin
June 4	Last Day to Add a Course
July 4, 5	Independence Day Holiday
July 22-26	Summer Vacation
Aug. 22	Classes End

Note: Prescheduling for the next quarter will be conducted during the ninth week of each quarter.

ACADEMIC CALENDAR

FALL QUARTER 1974 THRU SUMMER QUARTER 1975

FALL QUARTER 1974

Sept.	3	New Student Orientation & Registration
Sept.	4	Classes Begin
Sept	10	Last Day to Add a Course
Nov.	19	Classes End
Nov.	21, 22, 25	Thanksgiving Holidays

WINTER QUARTER 1974

Nov.	27	Registration
Nov.	28	Classes Begin
Dec.	4	Last Day to Add a Course
Dec.	23-31 (Incl)	Christmas Holidays
Jan.	1	New Year's Holiday
Feb.	25	Classes End

SPRING QUARTER 1975

Mar.	3	Registration
Mar.	4	Classes Begin
Mar.	10	Last Day to Add a Course
Mar.	28, 31	Easter Holidays
May	22	Classes End

SUMMER QUARTER 1975

May	27	Registration
May	28	Classes Begin
June	2	Last Day to Add a Course
June	30-July 4	Summer Vacation
July	7	Independence Day Holiday
Aug.	20	Classes End

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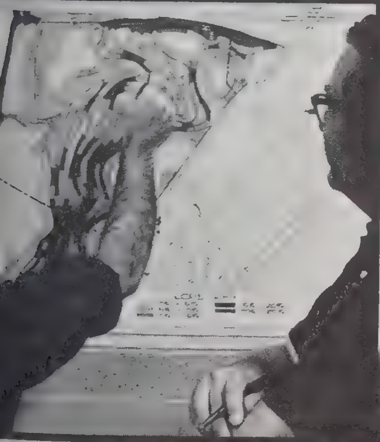
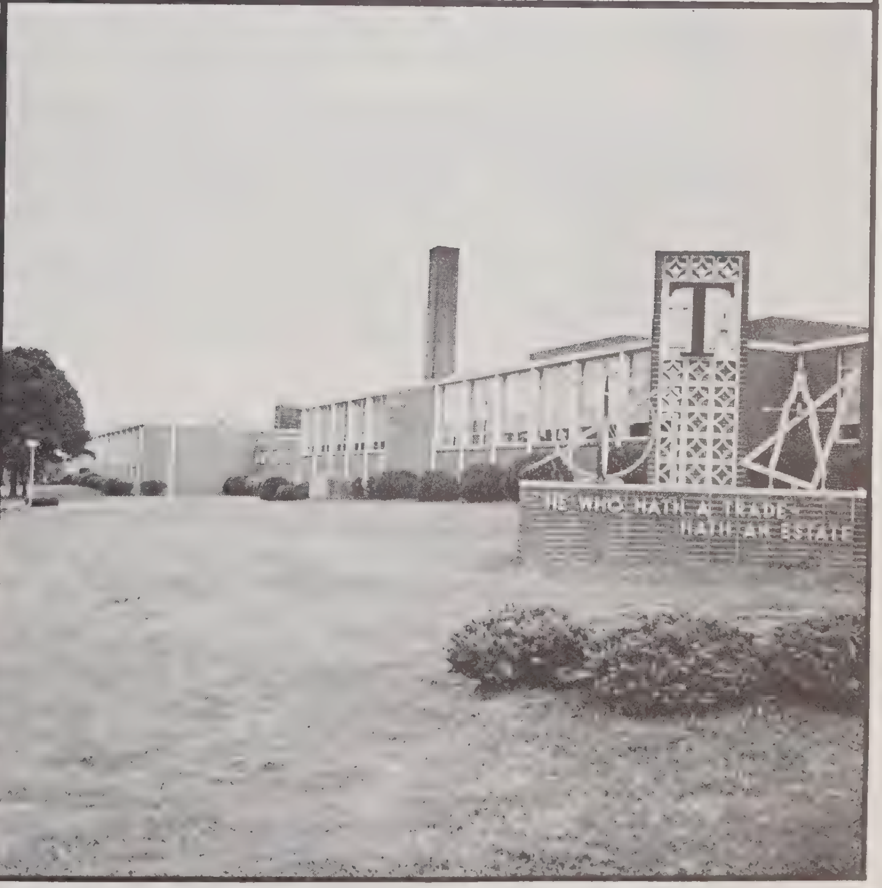
The Legal and Corporate Name of the Institution is:

"TECHNICAL INSTITUTE OF ALAMANCE"

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the Technical Institute of Alamance. The Institute reserves the right to make changes in the regulations, courses, fees, and other matters of policy and procedure as and when deemed necessary. The Institute further reserves the right, at any time, to request the student to withdraw when it considers such action to be in the best interest of the institution.

THE INSTITUTE

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HE WHO HATH A TRADE
HATH AN ESTATE

The Technical Institute of Alamance was established in 1959. Its establishment was part of a state-wide system known as Industrial Education Centers. Through the cooperative efforts of the State Department of Trade and Industrial Education and the schoool systems of Alamance County and Burlington, the Burlington-Alamance County Industrial Education Center was begun.

The need for and the development of the Institute has been centered on the principle of responsiveness to changing needs and conditions in the area. The expansion of the industrial and technological era in the State has created many new employment opportunities for technically trained personnel. In addition, the right of every individual to have an educational opportunity to develop according to one's potential has been recognized.

The initiation of a state-wide system of Industrial Education Centers was begun in 1957 by the allocation of funds by the General Assembly. In 1959, the General Assembly officially designated this type of vocational school as an Industrial Education Center.

Under legislation enacted in 1963, administration of the Industrial Education Center was transferred to the State Board of Education, Department of Community Colleges. The local control of the Institution was vested in a board of trustees by the new legislation.

In continuance of the principle of responsiveness to changing needs and conditions in the area, the Board of Trustees applied to the State Board of Education through the State Department of Community Colleges to become a Technical Institute. The State Board of Education approved the change in status to a Technical Institute in January, 1964. Along with the approval, authority was granted to award the degree, Associate in Applied Science Degree (A.A.S.), in approved programs. In the spring of 1964, the Board of Trustees changed the name of the Institute to Technical Institute of Alamance.

In November of 1966 the Board of Trustees of the Technical Institute of Alamance authorized an institutional self-study to assist in measuring the effectiveness of the educational program of the school. The Technical Institute of Alamance was accredited by the Southern Association of Colleges and Schools in December, 1969, as a result of this self-study and review by a visiting committee from the Association.

In September of 1971. Governor Robert Scott and Mrs. Elizabeth Carrington announced the donation of 48 acres of land to be used for the site of a new and expanded facility for the Institute. With the support of the community, the new campus should soon be a reality.

Future development of the Technical Institute of Alamance will, as in the past, be constantly responsive to the educational and occupational as well as culturally oriented needs of the community.

PURPOSE

The purpose of the Technical Institute of Alamance shall be to:

> Be responsive to the varied educational needs of the community and students by offering a variety of curricula;
>
> Provide opportunities for those desiring training through the technical level in business, science, applied arts, and engineering;
>
> Provide opportunities for those desiring occupationally-oriented training in skilled trades and health related fields;
>
> Provide courses for persons of suitable age who failed to complete high school, and to offer general adult education courses for social, cultural, and personal development;
>
> Provide educational services — speakers, resource personnel, and special programs — to individuals and groups as requested;
>
> Provide opportunities for the educational, cultural, and social aspects of the individual's total development through well-rounded curricula, adequate facilities and equipment, qualified faculty, and student activities.

ACCREDITATION

The Institute is accredited by the Southern Association of Colleges and Schools.

The Dental Assisting Program is accredited by the Council on Dental Education of the American Dental Association.

The Drafting and Design Technology and the Electronics Engineering Technology Programs are accredited by the Engineers' Council for Professional Development.

ADMISSIONS

ADMISSIONS

Through following an "open door" policy of admissions at the Technical Institute of Alamance, it is possible for a high school graduate or a school leaver 18 years old or older needing a formal educational opportunity to be served by the institution.

The "open door" policy does not eliminate the restrictions on admission to specific programs. It does mean that these restrictions will be flexible enough under careful guidance to allow a student every reasonable opportunity to prove himself under good teaching. A student will be afforded the opportunity to eliminate admission requirement deficiencies through remedial work, and may remain in the program of remedial work as long as he makes satisfactory progress. As soon as a student can meet the specific admission requirements, he may be enrolled in a curriculum. Refer to specific department for admission requirements for each program.

GENERAL PROCEDURES

1. The applicant must be eighteen years of age or older (or a high school graduate) to be admitted to curriculum programs at the Institute.
2. Applicant must submit an application form.
3. Applicant must have high school (and college) transcript or previous academic work or high school equivalency (GED) scores submitted to the Institute.
4. Applicant should report to the Institute for admission counseling and appropriate placement testing. There is no fee for this service. (Appointment schedules for testing will be mailed as applications are processed).
5. Applicant must be in acceptable physical and mental health. Handicapped persons will be considered on a individual basis.

In addition to the basic standards for admission, specific requirements may apply to certain programs. These requirements may be found in the appropriate program section of the catalog.

To facilitate acceptance, applicants should if at all possible submit applications thirty days prior to registration. It is especially important to apply early when applying for programs in which enrollment may be limited.

VETERANS

The Technical Institute of Alamance is approved by the Veterans Administration for students who are eligible under the law. Veterans and dependents or students who expect to enroll under the War Orphans Educational Assistance Act should:

(1) Notify the Institute of intent to enroll under the Veterans Administration.

(2) Make application and be accepted by the Institute.

(3) Notify the Veterans Administration of intended enrollment, specifying the curriculum to which you have been accepted.

SPECIAL STUDENTS

Special students are those who are enrolled for course credit but not in a curriculum leading to the diploma or the associate degree. Students enrolled in this status will normally be required to meet the prerequisites for the course or to demonstrate a necessary level of competence by an appropriate test. Students enrolled on this basis must do so through arrangement with the Student Personnel Office.

PROVISIONAL STATUS STUDENTS

Students who have not completed placement tests or lack sufficient data for their file may be classified as provisional students. Those students on this status must complete all admission requirements following actual enrollment.

REGISTRATION PERIODS·

The Institute operates on a quarter system. Registration of new students for all curriculum programs occurs at the beginning of the fall quarter in September and any other quarter when there are sufficient students to begin a program.

Continuing students may consult the Institute calendar for specific dates of subsequent registration periods.

CLASS HOURS

Courses are scheduled between the hours of 8:00 A.M. and 10:00 P.M., Monday through Thursday and between 8:00 A.M. to 5:00 P.M. on Fridays.

SCHEDULE OF CURRICULUM CLASSES

Shortly before registration each quarter, the Institute will announce a master schedule of courses to be offered. This will generally include those courses required for a student to complete the work as outlined in the catalog for his curriculum. In some instances, however, it will be necessary for the Institute to rearrange this sequence of course offerings. Every effort will be made to enable a student to complete his program in the minimum possible time. Whenever practical, make-up classes and special courses will be offered to those needing them.

PRE-SCHEDULING

Using this master schedule of courses, each student must consult with his advisor prior to registration to arrange a class schedule to meet his own particular requirements. A pre-scheduling period will be announced each quarter.

COURSE LOAD

Students enrolled for 12 or more credit hours are classified as full-time students. Students enrolled in less than 12 credit hours are classified as part-time. The recommended course load varies from one curriculum to another and will be greater than 12 credit hours in most cases.The length of time indicated to complete any program is based on the recommended course load as outlined within this catalog. Any deviation from the proposed schedule will extend the time required to graduate.

Each student should carefully plan his course load with his Faculty Advisor. It is sometimes recommended that a student take less than the full course load in order to insure that he will have reasonable chance for success in his program.

Students, with the approval of their advisor, may take more than the usual course load.

Students receiving educational benefits from Social Security are required to carry 12 credit hours (must be full-time student.) Those students receiving benefits from the Veterans Administration receive benefits in accordance with the following criteria:

Benefits	*Associate Degree*	*Diploma*
Full-Time	12 credit hrs. min.	30 clock hrs. min.
Three-Quarters	9-11 credit hrs.	23 clock hrs. min.
Half-Time	6-8 credit hrs.	15 clock hrs. min.

TRANSFER CREDIT

The Technical Institute of Alamance permits admission with transfer credit for students from member institutions of the North Carolina Department of Community Colleges, and other recognized and approved institutions. Content of such courses must closely parallel these for which credit is sought at the Institute.

The Registrar and Department Head must approve all transfer credits and each application for transfer of credit will be evaluated according to the individual situation. Transfer courses will transfer for credit only.

Candidates for a diploma or degree are normally expected to complete one-half of their course work at this institution. Special cases will be given consideration.

TRANSFER CREDIT TO OTHER SCHOOLS OR COLLEGES

There are an increasing number of schools and colleges who are accepting course work, completed in a technical program at TIA for credit toward the Bachelor's Degree. Most of these colleges consider each applicant and his record individually and the courses for which credit is sought must be similar to the course (s) offered by that institution. Some colleges give credit on the basis of examinations. A few colleges give full-credit for the Associate in Applied Science Degree either toward a Bachelor of Arts, Bachelor of Science or Bachelor of Technology.

For those few students who do desire to continue their education after graduation from TIA, there are indeed expanding opportunities to do so. If you are one of these, you should see a counselor at TIA for further details or write the college being considered.

WAIVING OF COURSE REQUIREMENTS BY PROFICIENCY EXAMINATION

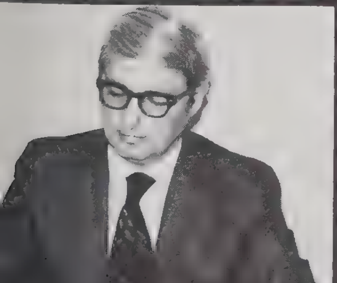
Under special requirements set up by each Department Head of a curriculum department, a student may be allowed credit toward graduation for past schooling or work experience. The student should confer with his major Department Head in regard to procedure to be followed.

A grade symbol of CE (Credit by Examination) will be awarded for courses for which credit is given on the basis of proficiency examination, previous education, or work experience. The course hours for such courses posted as "CE" will be computed toward graduation requirements; however, no quality points will be credited, and the hours will not be computed in the quality point average.

AUDIT STUDENTS

A student may elect to audit a course or courses. Those auditing receive no credit and do not have to take any examination; otherwise, participation in class is on the same basis as a credit student. The fee for auditing is the same as the fee for credit.

EXPENSES



RESIDENCE STATUS FOR TUITION PAYMENT

1. *General:* The tuition charge for legal residents of North Carolina is less than for nonresidents. To qualify for in-state tuition, a legal resident must have maintained his domicile in North Carolina for at least the twelve months next preceding the date of first enrollment or re-enrollment in an institution of higher education in this state. Student status in an institution of higher education in this state shall not constitute eligibility for residence to qualify said student for in-state tuition.

2. *Minors:* A minor is any person who has not reached the age of eighteen years. The legal residence of a person under eighteen years of age at the time of his first enrollment in an institution of higher education in this state is that of his parents, surviving parent, or legal guardian. In cases where parents are divorced or legally separated, the legal residence of the father will control unless custody of the minor has been awarded by court to the mother or to a legal guardian other than a parent. No claim of residence in North Carolina based upon residence of a guardian in North Carolina will be considered if either parent is living unless the action of the court appointing the guardian antedates the student's first enrollment in a North Carolina institution of higher education by at least twelve months.

3. *Adults:* An adult is any person who has reached the age of eighteen years. Persons, eighteen or more years of age at the time of first enrollment in an institution of higher education, are responsible for establishing their own domicile. Persons reaching the age of eighteen, whose parents are and have been domiciled in North Carolina for at least the preceding twelve months, retain North Carolina residence for tuition payment purposes until domicile in North Carolina is abandoned. If North Carolina residence is abandoned by an adult, maintenance of North Carolina domicile for twelve months as a non-student is required to regain in-state status for tuition payment purposes.

4. *Married Students:* The legal residence of a wife follows that of her husband, except that a woman currently enrolled as an in-state student in an institution of higher education may continue as a resident even though she marries a nonresident. If the husband is a nonresident and separation or divorce occurs, the woman may qualify for in-state tuition after establishing her domicile in North Carolina for at least twelve months as a nonresident.

5. *Military Personnel:* No person shall lose his in-state resident status

by serving in the Armed Forces outside of the State of North Carolina. A member of the Armed Forces may obtain in-state residence status for himself, his spouse, or his children after maintaining his domicile in North Carolina for at least the twelve months next preceding his or their enrollment or re-enrollment in an institution of higher education in this state.

6. *Aliens:* Aliens lawfully admitted to the United States for permanent residence may establish North Carolina residence in the same manner as any other nonresident.

7. *Property and Taxes:* Ownership of property in or payment of taxes to the State of North Carolina apart from legal residence will not qualify one for the in-state tuition rate.

8. *Change of Status:* The residence status of any student is determined as of the time of his first enrollment in an institution of higher education in North Carolina except:

    (a) In the case of a nonresident student at the time of first enrollment who has subsequently maintained domicile as a nonstudent for at least twelve consecutive months and

    (b) In the case of a resident who abandons his legal residence in North Carolina.

    In either case, the appropriate tuition rate will become effective at the beginning of the first subsequent term enrolled.

9. *Responsibility of Students:* Any student or prospective student in doubt concerning his residence status must bear the responsibility for securing a ruling by stating his case in writing to the Registrar. The student who, due to subsequent events, becomes eligible for a change in classification, whether from out-of-state to in-state or the reverse, has the responsibility of immediately informing the Registrar of his circumstance in writing. Failure to give complete and correct information regarding residence constitutes grounds for disciplinary action.

TUITION: NORTH CAROLINA RESIDENT

Full-time students who are residents of North Carolina pay a maximum tuition of $32.00 per quarter.

Part-time students are charged a fee of $2.50 per credit hour.

OUT-OF-STATE (NON-RESIDENT)

Students who are not legal residents of North Carolina pay a higher tuition than do residents. Full-time, non-resident students are charged a tuition fee of $137.50 per quarter.

Part-time, non-resident students are charged $11.45 per credit hour.

ACTIVITY FEE

An activity fee of $2.00 per quarter is required of all full-time students, both resident and non-resident. Part-time students may elect to pay the fee; this will entitle them to participate in student activities sponsored by the Student Government Association.

The fee is due at the beginning of each quarter. These fees are disbursed at the discretion of the Student Government Association to finance the athletic program, student publications, social events, and other student body programs or activities. This fee is not refundable.

YEARBOOK FEES

Probably every student will want to have a copy of the student yearbook, the *Titan*. It may be purchased by subscription at $6.00 per copy. This fee is not refundable and purchase is optional.

LATE REGISTRATION FEE

To prevent or reduce the problems incidental to late registration, registration periods are scheduled for specific dates and definite procedures are established.

Any student who fails to complete registration for all classes and to make the required payment of expenses and fees on the prescribed registration day according to the official school calendar will be charged a late registration fee of $5.00. This applies to all curriculum students with no exception — day, evening, full-time, part-time, special, and audit enrollees.

Those with anticipated financial difficulties should contact the financial aid officer, in person, in advance of the registration date.

BOOKS AND SUPPLIES

All of the student's necessary textbooks can be acquired from the Institute's bookstore. Drawing supplies, slide rules, nursing caps, nurses and dental assistant pins, composition books, pens, pencils, decals and other miscellaneous items are also available in the bookstore. Class rings may also be ordered with the required deposits.

The bookstore is operated on a strictly cash basis and there is no refund on books or supplies. It would be to the student's advantage to meet each class at least once before attempting to purchase texts and materials.

Some textbooks cost as little as $1.25 and others as much as $15.00, but the average cost of each book is approximately $8.00. Most students should anticipate spending an average of approximately $40.00 per quarter for books, supplies, and materials. The total cost varies according to the particular program. The nursing, drafting and commercial art programs require special items and/or instructional kits which may vary from quarter to quarter. Students in Automotive Mechanics may be required to furnish a set of basic hand tools.

INSURANCE

Accident insurance, covering hours in school and transportation to and from school, is available for $3.00 per year. Students desiring this insurance may make payment during registration and at other designated times to the Business Office. It is not refundable.

Students enrolled in all shops and labs are particularly urged to take advantage of this insurance.

SUMMARY OF QUARTERLY EXPENSES FOR FULL TIME STUDENTS*

	N. C. Resident	Non-Resident	
Tuition	$32.00	$137.50	
Activity Fee	2.00	2.00	
Insurance (optional)	3.00	3.00	(paid once a year)
Books and Supplies (Estimate)	40.00	40.00	
Yearbook (optional)	6.00	6.00	(paid once a year)
	$83.00	$188.50	

Students in the curriculum or programs listed below will have additional expenses (approximately):

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* All fees subject to change.

Practical Nursing: $20.00 (Uniforms) $20.00 (State Nursing Board Exam)

Commercial Art: $50.00 (Drafting Kit and Supplies)

Drafting: $30.00 (Drafting Kit and Supplies)

Automotive Mechanics: $35.00 (Tool Kit)

Dental Assistance: $60.00 Uniforms and Shoes

The cost of board and room is not included in the above fees. Assistance in planning a total budget will be provided by the Financial Aid Officer upon request.

FINANCIAL AID AND ASSISTANCE

The purpose of student financial aid is to provide financial assistance to students who, without such aid, would be unable to attend TIA. Recognition is made that the principal responsibility of financing an education lies with the family and with the student himself. Financial aid consists of scholarships or grants, loans, and employment or a combination of these. All recipients must be full-time students. Applications for financial aid may be obtained from the Financial Aid Officer.

Other student aids, veterans benefits, and social security are coordinated by the Director of Student Personnel Services.

All requests for financial assistance should be made well in advance of registration.

TRANSCRIPT FEE

The first transcript is free. After the initial transcript is issued, a $1.00 fee will be charged for each subsequent transcript.

REFUND POLICIES

Cash Refund

Tuition refund for students shall not be made unless the student is, in the judgment of the institution, compelled to withdraw for unavoidable reasons. In such cases, two-thirds (2/3) of the student's tuition may be refunded if the student withdraws within ten (10) calendar days after the first day of classes as published in the school calendar. Tuition refunds will not be considered after that time. Tuition refunds will not be considered for tuitions of Five Dollars ($5.00) or less except if a course or curriculum fails to materialize, and in such case all the tuition will be refunded. Exception: Those students who are veterans or war orphans receiving benefits under U. S. Code, Title 38, Chapter 33 and 35 may be refunded the pro rata portion of the tuition fee not used at the time of withdrawal of such students.

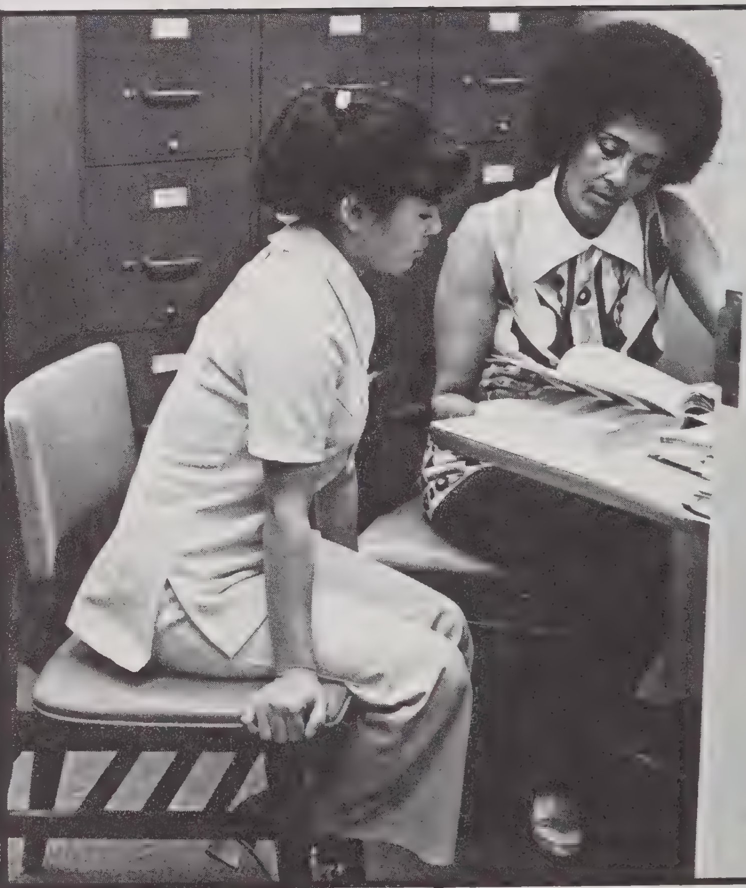
CREDIT FOR UNREFUNDED TUITION AND FEES

When a student, having paid the required tuition and fees for a quarter, withdraws from the institution before the end of the quarter and the reasons for the withdrawal are found excusable, the student may be allowed credit for unrefunded tuition and fees if he applies for re-admission during any of the next four calendar quarters and petitions in writing to be allowed such credit.

When a student, having paid the required tuition and fees for a quarter, dies during the quarter, (prior to or on the last day of examinations) all tuition and fees for that quarter may be refunded to the estate of the deceased.

There is no refund on payments for activity fees, insurance premium fees, yearbook, and special fees such as late registration.

SERVICES



COUNSELING

Counseling in relation to program choice, entrance placement, educational objectives and vocational goals is available to all students at the Technical Institute of Alamance. Prospective students are encouraged to utilize these services as they are making plans for further education.

Information concerning entrance and graduation requirements, financial aid, employment trends, job opportunities, student activities, and student policies are all services offered by the counseling staff. Testing for aptitude and interest is available when appropriate.

Counseling for personal growth and adjustment on the basis of individual need is one of the primary services offered by the staff. Assistance in referral to other agencies is available.

Counselors are available at the Student Personnel Office.

ADVISOR

Upon enrollment, each student is assigned a faculty advisor who will provide academic guidance throughout his program. The advisor will assist in planning the course load and schedule each quarter until graduation. The advisor must approve all schedules and schedule changes.

ORIENTATION

The purpose of the orientation program is to introduce the student to the administrative personnel, faculty, and student leaders. Tours and discussions familiarize the student with the overall educational opportunity at TIA. The rules, policies, and privileges as well as the use of facilities, resources, and programs are discussed. All new students and transfer students are expected to attend.

STUDENT HOUSING

The Institute does not have dormitory facilities and does not assume responsibility for housing. However, Burlington residents do voluntarily offer housing facilities. Costs will vary between $12 and $18 per week according to livability and convenience. Students are urged to make early plans for housing and investigate before enrollment date.

PLACEMENT SERVICE

The Placement Service is designed to guide and assist the student in obtaining the type of position for which he is best qualified.

Prospective employers contact the Institute in their recruitment of qualified employees. Information on these job opportunities is shared with the students seeking employment. Information concerning employment trends and salary data is also available.

The Institute does not guarantee employment; the primary responsibility for securing employment lies with the student. Those needing assistance in job placement should contact the Student Personnel Office.

GENERAL EDUCATIONAL DEVELOPMENT TEST

The GEDT is the high school equivalency examination recognized by the North Carolina State Board of Education. Successful completion of the GEDT indicates that the individual has demonstrated that he has the general educational competence comparable to that of a high school graduate. Persons taking the test must be at least 19 years of age. A person who is 18 years of age is also eligible if he has been out of the regular high school program for at least six months.

The test is given on campus several times a year. There is a fee of $3 due at the time the test is taken. Anyone interested in preparing to take the test should contact a counselor at the Institute.

STUDENT LOUNGE

The Student Lounge is conveniently located in the building and is open to all students as a place for relaxation and refreshments. A variety of soft drinks, along with coffee, candy, and sandwiches are available at the snack bar. Smoking is permitted only in the lounge.

LEARNING RESOURCES CENTER

A constant effort is made to establish the Learning Resources Center as an integral and vital part of each student's educational process. As its goal it strives to become a flexible extension of the classroom and a viable tool of the faculty.

The LRC consists of three parts all working together in a three-fold purpose: the library, the Learning Laboratory and the audiovisual center.

THE LIBRARY

The library has a collection of about 16,000 volumes, principally technical, but augmented with a well-rounded supporting collection covering all fields of interest. The non-book collection includes over 200 periodicals, microfilm, microfiche, maps, pamphlets, career and vocational brochures, school catalogs and many others.

Believing in the individuality of each student the staff is always ready to give any help needed and to allow private research or browsing as the student desires.

Hours 8:00-5:00 Monday - Friday
6:00-9:00 Monday - Thursday

The Library is also open to the public. Private citizens, industries, businesses, community agencies, schools, teachers, civic organization, churches and many others will find something here of interest to them.

AUDIOVISUAL DEPARTMENT

The audiovisual department offers many and varied types of A-V media and equipment, most of which are available for student use when it is for class use or research for educational purposes.

The A-V department believes that a wide variety of available material helps to provide the student the opportunity to enjoy his education, gives him a chance to see more than one approach to the problem, and exposes him to varied stimuli.

LEARNING LABORATORY

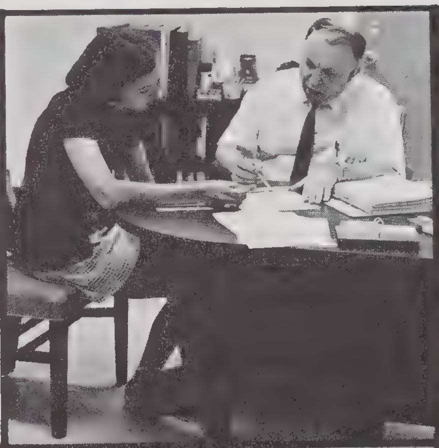
The Learning Laboratory was devised as a means of offering an opportunity to learn to many people who feel that they need to further their education, or to students who desire instruction designed to fulfill his needs.

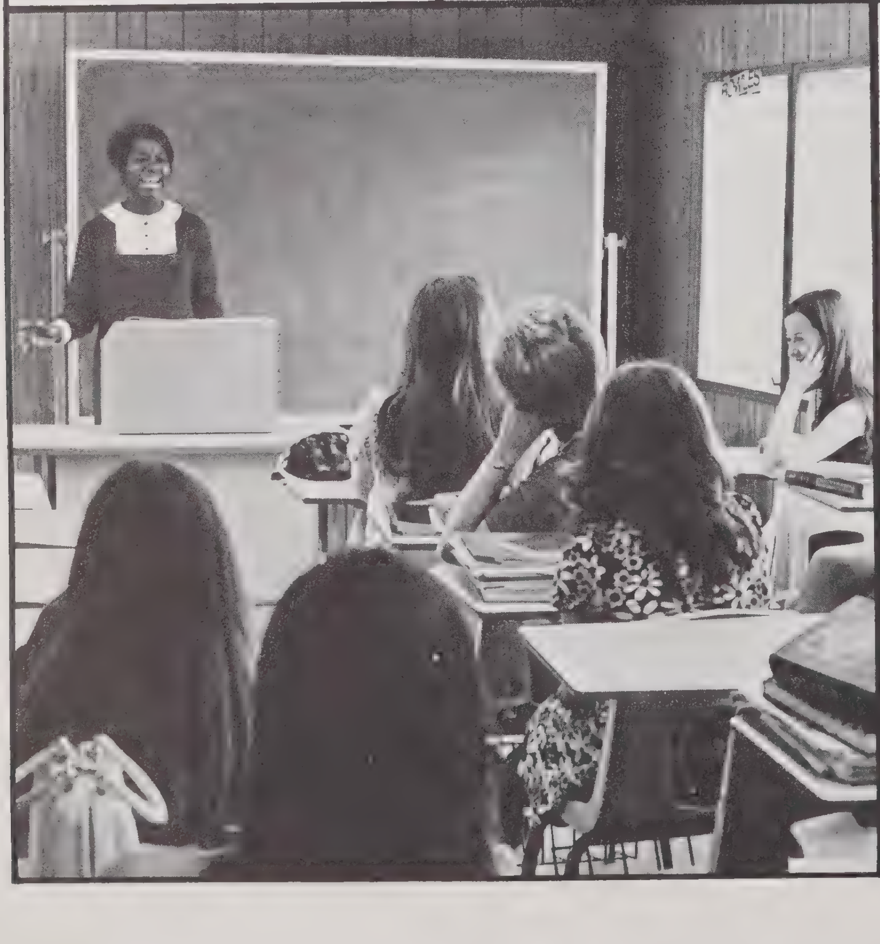
To implement this program the lab is equipped with a wide variety of programmed materials, audiovisual materials and equipment, books, etc.

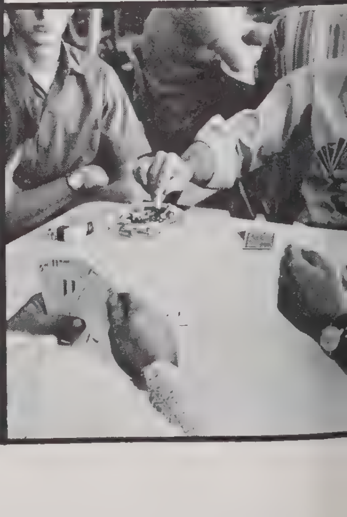
The staff treats every student as an individual and is always ready to help or design instruction suited to each students particular needs.

Hours 8:30-5:00 Monday - Thursday
8:30-4:00 Friday

ACADEMIC REGULATIONS







GRADING AND QUALITY POINT SYSTEM

The Technical Institute of Alamance operates on a quality point system. In the computation of a student's average, one quarter hour of work passed at TIA with a grade of A, B, C. D, or F is given a numerical value of 4, 3, 2, 1, 0 respectively, which is then multiplied by the number of quarter hours represented by the course. The resulting product is the number of quality points earned for the course with the grade received.

The quality point average is determined by dividing the total quality points earned in all courses by the total number of quarter credit hours scheduled including any courses failed.

GRADING AND QUALITY POINT SYSTEM

At the end of each quarter grades are given in each course by letters which are indicators of the quality of work done by the student.

A—Excellent	4 quality points for each credit hour
B—Good	3 quality points for each credit hour
C—Satisfactory	2 quality points for each credit hour
D—Passing	1 quality point for each credit hour
F—Failure	0 quality points. This signifies that the student has not met the minimum objectives of the course.
I—Incomplete	No credit. A grade of incomplete is assigned only when a specific requirement of a course has not been met. The instructor must specify in writing the conditions under which the "I" is to be removed. Incompletes not removed within one quarter will be recorded as "W" or "F" as determined by the instructor.
R—Re-enroll	No credit unitl the course objectives are completed.
W—Withdrawn	This signifies that the student has withdrawn during the first three weeks of the quarter, or later in the quarter with approval of the instructor.
AU—Audit	This signifies that the student has taken a course for no credit.
CE—Credit by Examination	This signifies that the student has met the objectives of the course and has demonstrated this by taking a proficiency examination. See "Waiving of Course Requirements," p. 14.
TR—Transfer	This signifies that credit for the course was accepted from another institution.

The QPA (quality point average) is a general measure of the quality of a student's work. The QPA is determined by dividing the total number of grade points earned by the total number of quarter hours attempted (excluding "I" and "R" grades).

ACADEMIC PROBATION

A student must achieve a cumulative quality point average of at least 2.0 in order to graduate. Failure to achieve a 2.0 cumulative quality point average at the end of any quarter will result in the student being placed on academic probation. The student will be notified of his probationary status and may be required to schedule periodic conferences with a counselor or advisor. Students whose quality point average for the quarter is less than 2.0 but whose cumulative QPA remains 2.0 or above will receive written notice of possible academic difficulty.

A student on probation may remain in his program as long as his subsequent quarter's QPA meets the minimum of 1.50. If the subsequent quarter's work should fail to meet this minimum, the student may be required by his Department Head to drop certain courses or change curriculum, and/or take developmental work. After all possible alternatives are exhausted and it becomes evident that the student is unable to maintain progress, the Department Head may recommend to the Student Affairs Committee that the student be dismissed from the program in which he is presently enrolled.

Re-admittance at a subsequent quarter will be at the discretion of the Student Affairs Committee and with the approval of the President. Students may appeal a decision of the Department Head by letter to the Student Affairs Committee. (See Appeals Procedure)

SPECIAL HELP

It is the student's responsibility to seek out extra help if necessary. Instructors may not require a person come in, but they are available for conferences and are always willing to help.

CLASS ATTENDANCE

POLICY

Regular class attendance is regarded as essential to the academic progress of the student. Registration in a course is regarded as a contract between the student and the institute.

If a student's class attendance threatens his progress in the course or impedes the progress of the class, he may be asked to withdraw from the class.

STUDENT'S RESPONSIBILITY

1. In no instance does absence from class relieve the student from the responsibility for the performance of any part of his course work.

2. The student is responsible for complying with any special attendance regulations specified by his instructor.
3. The student is responsible for initiating any request to make up work missed because of class absence. The decision to assist the student with "make up" work, including tests, in every case rests with the instructor.

INSTRUCTOR'S RESPONSIBILITY

1. An instructor may prescribe such reasonable regulations as he feels necessary. At the beginning of each quarter he shall inform the students in his classes of these regulations and file a copy with the dean of instruction.
2. Cases of unsatisfactory class attendance with a recommendation of appropriate action are to be reported to the dean of instruction.

APPEALS PROCEDURE

1. Any student who disagrees with disciplinary action taken with regard to him shall first consult a counselor (except the Director of Student Personnel) for advice as to the advisability of, and the procedure for, appeal.

2. All student appeals, disagreements, controversies and complaints arising out of in-class situations shall be resolved initially by the student's Division Chairman. In the case where the Division Chairman is one of the parties directly involved in the controversy involving a student, or when the Division Chairman is unavailable, then the matter shall be decided by the Director of Occupational Education.

3. Appeals may be taken by the student and/or faculty or staff member from the decisions of the Division Chairman (or Director of Occupational Education, as the case may be) and Director of Student Personnel to the Student Affairs Committee.

4. When appeals are taken to the Student Affairs Committee, that Committee shall be impanel an impartial and disinterested body of faculty members (either three or five in number) plus two students appointed by the president of the Student Government Association, who shall recommend appropriate action. The recommendation of the special panel shall then be forwarded to the president of the institution for appropriate action.

INSTRUCTOR ABSENCES

In cases when the instructor is not in class and other arrangements have not been made, the students are automatically dismissed after ten minutes. (30 minutes for evening classes). A roll must be signed by the students present and turned in by one of them to the General Office.

SCHEDULE CHANGES

Students should consult with their advisor and the Student Personnel Office before making any changes in schedule.

Adding Courses — Courses may be added only through the 5th academic day of the quarter.

Dropping Courses & Withdrawing from School — Courses dropped during the first 3 weeks are recorded as W (Withdrawal).

Courses dropped after the third week will be recorded as W or F as determined by the instructor.

A student who over-cuts a class may be dropped from class rolls at the discretion of the instructor.

WITHDRAWAL PROCEDURES

A student who intends to withdraw from *(drop)* a course or who intends *to withdraw from school,* must obtain forms for this purpose from the Office of the Registrar. Signatures of the advisor/counselor, the instructor for each course involved (and grade) and the Business Manager must be secured and the completed withdrawal form returned to the Registrar. (See Refund Policy).

ACADEMIC RECOGNITIONS

The *President's List* honors those students who qualify for the Dean's List but who obtain a 3.8 or higher quality point average for that quarter.

The *Dean's List* is published quarterly and contains the names of students who have quality point average of 3.3 to 3.79 for that quarter. No grade may be lower than C and the student must carry a minimum of 12 quarter credit hours to be eligible.

GRADUATION REQUIREMENTS

Students are required to apply as candidates for the diploma or the degree. This must be completed during the first two weeks of the last quarter of school attendance. This insures that the candidate's record will be properly reviewed, and that he will be notified of any deficiencies.

Requirements for the degree or diploma will vary according to curriculum. Course requirements for graduation are within this catalog. All students must have a grade point average of 2.0 (C average) to be eligible for graduation.

High Honors are awarded to those students who have earned a cumulative quality point average of 3.8 or higher while studying at the Institute.

Honors are awarded at Graduation to students who have earned a cumulative quality point average of 3.3 to 3.79 during their course of study.

Marshals for graduation are selected on the basis of having the two highest averages in the class to graduate the following year. Two students receive this honor.

Ushers for graduation are also selected on the basis of outstanding academic performance.

STUDENT LIFE

The education within any institution of higher learning is characterized not only by the quality of its academic program it offers, but also in the opportunity it offers for its members to grow and learn about themselves. The development of relationships among people of varying natures and backgrounds and the involvement and learning through participation in student functions and activities is very much a part of the campus life.

STUDENT GOVERNMENT

The Student Government Association provides democratic self-government for the students of the Institute. The Association is divided into the Executive Committee, composed of the Student Body President, Vice-President, Secretary and Treasurer; and the Senate, composed of elected representatives from each of the five curriculum divisions.

The Student Government Association is responsible for developing policies and programs for the general welfare of the Student Body. All campus clubs, student organizations, and athletics programs are approved through the Student Government Association.

The Student Review Board is a standing committee of the Student Government Association. Composed of student representatives, the Board hears the appeals of the students accused of violations of policy or regulations of TIA.

STUDENT ACTIVITIES

The variety of campus organizations and clubs provide a place for every student to become involved and be of service to the Institute and the community. Many opportunities for self-exploration and leadership are to be found in Student Activities.

Clubs

CIRCLE K — affiliated with Kiwanis International — is an organization of young men and women whose purpose is to emphasize the advantages of the American-Canadian way of life as it provides an opportunity for leadership training through service to the campus and community.

ROTARACT CLUB — dedicated to the development of the constructive leadership and personal integrity of its young men and women. Emphasis is on individual responsibility as the basis of personal success, community improvement and group achievement.

CHOIR — made up of young men and women who enjoy music and like to sing.

CHEERLEADERS ASSOCIATION — members are elected by the Student Body. The association is co-educational. They lead the cheering at all basketball events.

BLACK STUDENT UNION — the purpose of this organization is to provide tutoring services to TIA students, fund raising for sickle-cell anemia and Thanksgiving baskets to needy families.

Membership in clubs and organizations at TIA is open to all students without regard to race, sex, nationality or religion.

Athletic

TIA has an outstanding program and record in the area of sports. You are encouraged to add your talents and enthusiasm to make another winning year for the Titans. See the Student Activities Coordinator for more information.

BASKETBALL — Conference. (Piedmont Athletic Conference of Technical Institutes).

SOFTBALL — City League of Burlington.

GOLF — Non-conference.

BOWLING — Non-conference.

VOLLEYBALL — YMCA Tournament.

TENNIS — Non-conference.

Publications

THE ECHO — This newspaper is published by the students at the Technical Institute of Alamance. The paper provides coverage of campus news events, publicity for activities, and other news of special interest to the student body. Students in Journalism 212 earn credit for work on the newspaper. All staff members work under the instruction of a professional.

THE TITAN — The yearbook is published annually and depicts campus activities and student life. It is compiled and edited by a student staff with the advisement of a professional.

THE STUDENT HANDBOOK — Published through the Student Personnel Office, the handbook provides information of concern to students, including student regulations, policies, student government, and student activities.

STUDENT POLICIES

Student Conduct

Students will be expected to conduct themselves at all times as individuals of prudence and maturity. The rights and feelings of others will be respected. Students shall demonstrate a high regard for school facilities and property and for the personal property of others.

School regulations which serve to control such activities as vehicular traffic and parking, smoking, and other aspects of personal conduct must be observed. Students may be suspended or dismissed for conduct which is considered incompatible with standards of propriety and good judgment.

Re-admittance of dismissed students at a subsequent session will be at the discretion of the President. Students may appeal a suspension or dismissal decision by letter to the Board of Trustees via the President.

Dress Code

It is not the intent of the Institute to impose upon individual style and creativity. Rather, it would encourage all students to dress in a manner in keeping with the serious academic intent of the Institute and in a manner acceptable to the community which the Institute serves.

In light of this, TIA students are expected to use their own judgment in what is appropriate dress. Because of the hazards created in the building, bare feet are prohibited.

DISRUPTIVE POLICY

SEC. I-1 Definition of Disruptive Conduct

The Technical Institute of Alamance honors the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that in a community of learning willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated.

(a) Any student, faculty member (including full-time or part-time instructor), or employee who willfully by use of violence, force, coercion, threat, intimidation or fear, obstructs, disrupts or attempts to obstruct or disrupt, the normal operations or functions of the Technical Institute of Alamance, or who advises, procures, or incites others to do so, shall be subject to suspension, expulsion, discharge, or dismissal from the Institute. The following, while not intended to be exclusive, illustrate the offenses encompassed herein: occupation of the Institute building or part thereof with intent to deprive others of its use; blocking the entrance or exit of the Institute building or corridor or room therein; setting fire to or by any other means substantially damaging building or property, or the property of others on the Technical Institute premises; except as necessary for law enforcement, any display of or attempt or threat to use firearms or explosives or, for the purpose of intimidating, other weapons, in the Institute building or on the Institute campus; prevention of the convening, continuation or orderly conduct of any Institute class or activity or of any lawful meeting or assembly in the Institute building or on the Institute campus; inciting or organizing attempts to prevent student attendance at classes; and, except with the permission of the President, blocking normal pedestrian or vehicular traffic on the Institute campus.

(b) The possession of bowie knives, dirks, daggers, loaded canes, sword canes, machetes, pistols, rifles, repeating rifles, shotguns, pump guns, or other firearms or explosives upon the Institute campus or in the Institute owned or operated facility, unless explicitly permitted by the President or his designated representative in writing, is forbidden. Violation of this prohibition constitutes grounds for suspension from the Institute.

(c) Any faculty member (including any full-time or part-time instructor) who, with intent to obstruct or disrupt the normal operations or functions of the Institute, willfully fails or refuses to carry out validly assigned duties shall be subject to discharge.

SEC. I-2 Responsibility of the President

When it appears that there is a violation of Section I-1 (a), (b), or (c), it shall be the duty of the President, and he is fully authorized to act, to take all steps which he deems advisable to protect the best interest of the Technical Institute of Alamance, and to see that its Rules, Regulations and Policies are enforced. He shall insure that any person or persons found guilty after hearing shall be disciplined in such manner as may be warranted.

In carrying out these duties, the President may call upon any member of the Institute Administration, or member of the Faculty, and he may call upon any agency created to deal with cases arising under Section I-1. Conviction in any State or Federal Court shall not preclude the Institute from exercising its disciplinary authority in any offense under this or any other section of the policy.

Subject to the provisions of Section I-1 through I-4 of these policies, it shall be the duty of the President to exercise full authority in the regulation of student conduct and in matters of student discipline in the institution. In the discharge of this duty, delegation of such authority may be made by the President to faculty committees and to administrative or other officers of the institution, or to agencies of student government, in such manner and to such extents as may by the President be deemed necessary and expedient; provided, that in the discharge of this duty it shall be the duty of the President to secure to every student the right of due process and fair hearing, the presumption of innocence until found guilty, the right to know the evidence and to face witnesses testifying against him, and the right to such advice and assistance in his own defense as may be allowable under the regulations of the institution as approved by the President. In those instances where the denial of any of these rights is alleged, it shall be the duty of the President to review the proceedings.

SEC. I-3. Responsibility of the Trustees

The Trustees recognize that by statute they have the power to make such rules and regulations for the management of the Institute as they may deem necessary and expedient, not inconsistent with the constitution, laws of the State, and policies of the State Board of Education. While the Trustees fully appreciate their obligation in this respect, they further recognize that in dealing with those offenses against the Institute defined in Section I-1 (a), (b), or (c) hereof, they must impose the duty and authority of enforcing the policies set forth herein in the Chief Administrative Office of the Institute — the President. It will be the responsibility of the Trustees to furnish all possible assistance to the President when requested by him.

SEC. I-4. No Amnesty

No administrative official, faculty member, student, or employee of the Institute shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state, or federal, or before any student, faculty, administrative, or Trustee committee to any person charged with or suspected of violating Section I-1 (a), (b), or (c) of these Policies.

GENERAL ADULT EDUCATION

The Department of General Adult Education provides the adult community with a wide range of educational opportunities. Programs and courses are developed to meet the needs and interests of the general public or of local industry personnel and community agencies.

The adult at any educational level may select programs or courses to help him meet his objectives or educational goals. One can also make special requests; new courses are developed whenever interest indicates a need. A call should be made to the institute to indicate this need.

Currently, there are four main categories of courses in this department. They are: Adult Basic Education; Adult High School; Self-improvement and General Interest; and Occupational Extension.

Individuals desiring further information should refer to the Adult Education Catalog. Those individuals needing assistance in planning their educational program should consult with a counselor at the Institute or call the Adult Education Office.

ADULT BASIC EDUCATION

Basic education (grades 1-8) is open to any adult at least 18 years old.

Classes usually meet twice weekly, three hours each night, and are located in various communities throughout Alamance and Caswell Counties. Reading, writing, spelling, and arithmetic make up the major areas of study.

The student may enter the program at any time, and progress at his own speed.

After finishing the eighth grade level, the student may enter the Adult High School program.

Cost: No charge.

ADULT HIGH SCHOOL

In cooperation with the Burlington City Schools, TIA offers a high school diploma program to adults who did not graduate from the public schools. The student may transfer completed units from his previous high school. Units may be earned at TIA through regular classroom study in the fields of English, mathematics, social studies, science, foreign language, and vocational training.

Students may enter the High School Program at the beginning of any quarter, approximately September 1, December 1, March 1, and June 1.

Graduates will be issued an Adult High School Diploma from the Burlington City School System.

Adults who already have a high school diploma may enroll in high school courses for refresher training. Those students considering further training after high school should plan the sequence of high school courses with the assistance of a counselor.

Cost: No charge except to purchase textbooks — $3 - $5 per course.

GENERAL EDUCATIONAL DEVELOPMENT TEST

High school equivalency examination. See Learning Laboratory section in this catalog.

SELF-IMPROVEMENT AND GENERAL INTEREST COURSES

A broad range of courses is offered in this area, including, but not limited to, the list below. Courses are offered day and night, for short durations, in order to fit the busy adult's schedule. Variations of course offerings are limited only by community interest and available instructors. Adults should call the Institute to express their areas of interest.

Cost: No charge.

Academic

Special Remedial Courses
College Preparatory Courses
Advanced Courses

Creative Arts

Music Reading Clinic
Painting and Drawing
Art Appreciation
Art Exhibits
Creative Writing

Parent Education

Adolescent Behavior
Pre-school Problems
Child Psychology
Maternity Care
Modern Math for Parents
Speech Therapy for Parents
Drug Abuse

Language Arts

Literature
Creative Writing

Hobby Courses

Small Engine Repair
Auto Tune-up at Home
Orientation to the Auto for Women
Ham Radio
Orientation to the Motorcycle
Volunteer Choir
Ground School for Private Pilots
Boating and Seamanship
Horse Care and Management

Citizenship

North Carolina History
American History
Political Parties
The Constitution
Forums on Community Affairs

Family Life

Mental Hygiene
Geriatrics
Community-Family Relations
Exceptional Children

Public Speaking
Speedreading
Effective Listening

Homemaking

Sewing
Tailoring
Interior Decorating
Nutrition
Landscaping and Gardening
Drapery Making

Foreign Languages

Conversational French
Conversational Spanish

Consumer Education

Family Finance
Law for the Layman
Consumer Problems
Personal Investments

OCCUPATIONAL EXTENSION

Extension courses are job-related part-time studies to increase skills of employees.

Special extension areas are state-wide in nature. These courses can be taken through many of the Community College Systems' institutions throughout the state, each issuing cumulative credits toward extension diplomas.

Cost: No charge.

Fire Service Training

Designed for full-time and volunteer firemen including courses such as:

Arson
Fire Brigade
Salvage Operation
Protective Equipment
First Aid and Rescue
Forcible Entry
Extinguisher Practices
Rope Practices
Home Fire Safety
Area Fire Schools

Hospitality Training

Designed for the hotel-motel and food service industry including such courses as:

Waitress Training
Housekeeping
Management
Communication
Promotion
Service Station Retailing
Food Preparation
School Food Service

Law Enforcement

Designed for law enforcement officers including such courses as:

Introduction to Police Science
Courts and Law
Elements of Arrest
Search and Seizure
Evidence
Investigation
Motor Vehicle Law
Liquor Law
Administration
Human and Public Relations
Riot Control
Chemical Tests for Alcohol

Business Education

Beginning Typing
Shorthand Review
Office Machines

- Business English
- Beginning Shorthand
- Key Punch
- Bookkeeping
- Secretarial Practices
- Advanced Typing
- Advanced Shorthand
- Accounting
- Stenoscript — ABC Shorthand
- Business Law

Management Development Programs

Designed for the supervisory or pre-supervisory level including courses in:

- *Principles of Supervision
- *Human Relations
- *Act of Motivating People
- *Economics in Business and Industry
- *Job Methods
- Conference Leadership
- Job Instruction Training
- *Creative Thinking
- Industrial Safety and Accident Prevention
- The Effective Executive
- *Effective Communications
- Effective Writing
- Effective Speaking
- Reading Improvement
- Work Measurement
- *Industrial First Aid
- The Supervisor in North Carolina
- The Supervisor and Employee Benefits
- *Job Analysis Training
- Cost Accounting for Supervisors
- Employee Evaluation & Interviewing

A diploma in Management Development Programs is offered by the Department of Community Colleges in cooperation with the Technical Institute of Alamance. Supervisors may qualify for a MDP Diploma by completing nine required supervisory courses totaling

174 clock hours of instruction.

* Denotes required courses for Diploma

Extension courses are also developed to meet local needs as they arise. Courses are offered day or night, for various durations, to meet the working adult's schedule. The following courses represent examples of possible offerings:

Vocational

- Basic Electricity
- Air Conditioning
- Machine Shop
- Auto Mechanics
- Drafting
- Slide Rule
- Blueprint Reading
- Radio-TV Repair
- Home Appliance Repair
- Bricklaying
- Farm Electrification
- Apprenticeship Training
- Power Sewing
- Tractor Repair
- Nurses Aide
- Child Care
- Small Engine Repair

Technical

- Electronics
- Computer Operation
- Chemistry
- Fabric Design
- COBOL — Common Business Oriented Language
- Precision Measurements

Professional

- Review for Licensed Professional Engineers
- Refresher for Registered Nurses

Fundamentals of Real Estate
Methods of Teaching Vocational Subjects
Graduate Courses in Education (In cooperation with graduate schools)
Advanced Pharmacology for Licensed Practical Nurses

Other special programs may be offered to meet the training requirements of a specific business or industry.

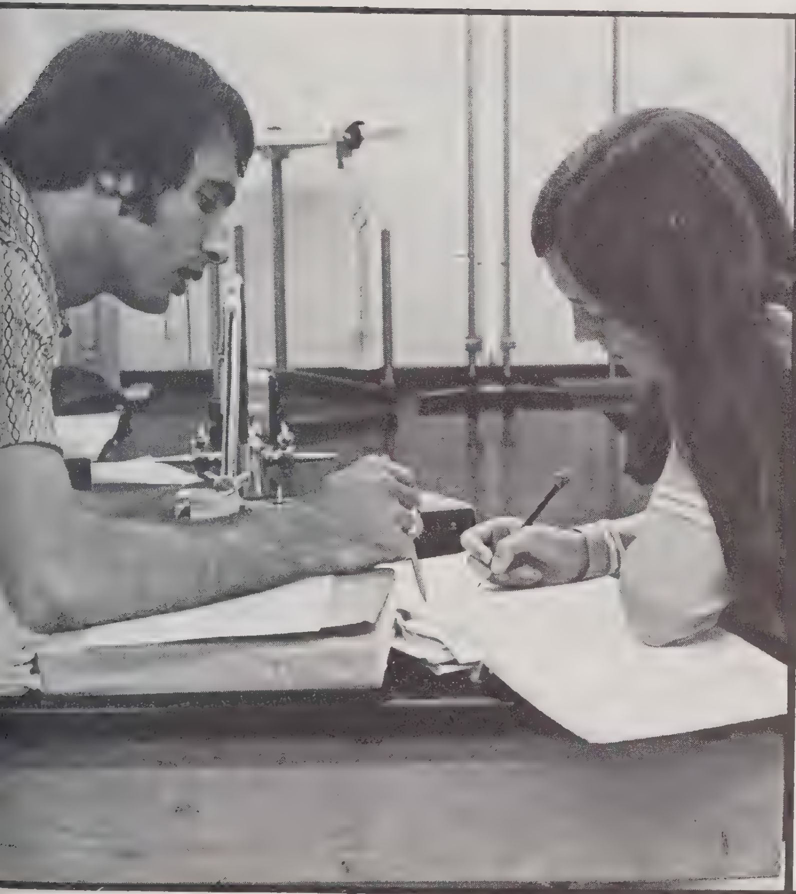
Instructional Personnel

Instructors are individuals who are academically qualified and/or who have *demonstrated successful work experience* in the subject area to be taught. Frequent use of case studies, audio-visual aids, and class participation insure a high degree of student interest.

Location and Time:

Classes are held both day and night at the Technical Institute at the sites of employment, and at various other locations convenient to the community.

CURRICULUM



Curriculum refers to all courses for which credit is given toward the Associate in Applied Science Degree or the Diploma.

PROGRAMS OF STUDY

The Technical Institute of Alamance offers the following programs of study:

ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAMS

Applied Arts	*Curriculum Code*
Audiovisual Technology	T-066
Commercial Art and Advertising Design	T-070
Technical Illustration	T-072
Business Technologies	
Accounting	T-016
Business Administration	T-018
Business Data Processing	T-022
General Office Technology	T-033
Medical Secretary	T-032
Scientific Data Processing	T-023
Technical Secretary	T-029
Engineering Technologies	
Air Conditioning and Refrigeration Technology	T-036
Chemical Technology	T-037
Drafting and Design Technology	T-043
Electronics Engineering Technology	T-045
Industrial Engineering Technology	T-047
Transportation Maintenance Technology	T-095
Public Service Technology	
Fire Science	T-063
Human Service Technology	
*Early Childhood Education	
DIPLOMA PROGRAM	T-073
Human Services	
Dental Assisting	V-011
Practical Nursing	V-038
Child Care	V-067
Mechanical Occupations	
Air Conditioning and Refrigeration Mechanics	V-024
Advanced Air Conditioning & Refrigeration	V-024

*Proposed

Automotive Mechanics	V-003
Advanced Automotive Mechanics	V-003
Machinist Trade	V-032
Advanced Machinist	V-032
Mechanical Drafting	V-017

DEVELOPMENTAL STUDIES

Before taking certain courses in a given curriculum program, some students may need to correct a deficiency in or review mathematics, or communications. Building a strong background in these areas helps assure success in the chosen curriculum.

The need for developmental work is determined through placement testing and student-counselor conferences during the admissions process. Where appropriate, the student may be scheduled for developmental business math, technical math, English, and/or social studies.

There are several advantages in taking the developmental courses. They are designed to enable the student to work at his own rate of learning and to allow the student to continue the course beyond one quarter if additional time is needed. When the objectives of the course are mastered, credit for the comparable curriculum course is granted. Thus, the student can make continual progress toward graduation although *additional quarters will probably be needed to complete the program.*

CONTACT HOURS AND CREDIT HOURS

Quarterly credit hours are awarded to students on the following arrangements:

Class Work is lecture and other classroom instruction.

Credit of one quarter hour for *each hour* of class work per week for eleven weeks. The average hour of class will require two hours of assigned homework, for an average student.

Laboratory involves demonstration by instructor, experimentation and practice by students.

Credit of one quarter hour for *each two hours* of laboratory work per week for eleven weeks. One hour of assigned homework will accompany an average laboratory period of two hours.

Manipulative Laboratory involves development of manual skills and job proficiency.

Credit of one quarter hour for *each three hours* of manipulative lab for eleven weeks. No outside work will ordinarily be assigned to accompany this shop period.

Symbols

C = Class Hrs. Per Week

CH = Credit Hrs. Per Qtr.

L = Lab Hrs. Per Week

° = Manipulative Lab

PREREQUISITES

Prerequisites are indicated for most courses offered at TIA. These are intended to give the student some measure of the proficiency expected for those beginning a given course. In the event where other courses and/or experiences might qualify the student to take the course, the instructor may permit him to enroll.

ASSOCIATE DEGREE PROGRAMS

The Associate in Applied Science Degree is a two year degree designed to prepare the graduate to enter his chosen field as a highly skilled technician.

Admissions Requirements

To be admitted to the two-year Associate in Applied Science Degree programs, the applicant should qualify as follows:

1. Be 18 years of age and a high school graduate or have a North Carolina approved equivalent education.
2. Complete the general admissions procedures as outlined in "Curriculum Admissions and Procedures" p. 11.
3. Demonstrate an aptitude for his desired training through placement testing and student-counselor conferences.
4. Meet the specific requirements of the department to which he is applying. These are as follows:

A.	Air Conditioning and Refrigeration Technology	—	2 units of Algebr
	Business Data Processing		" " " "
	Chemical Technology		" " " "
	Drafting & Design Technology		" " " "
	Electronics Engineering Technology		" " " "
	Industrial Engineering Technology		" " " "
	Scientific Data Processing		" " " "

*or one unit each of Algebra and Plane Geometry.

B. It is suggested that students in the engineering technologies should have completed one unit of physical science with laboratory.

C. Commercial Art and Advertising Design
Audiovisual Technology
Technical Illustration

Draw the following on appropriate 8½" x 11" paper. Do not use oil paint, illustration board, mats, or frames of any kind. Pen and ink, tempera, wash, water colors, conte crayon and pastels (with a fixative) may be used.

1. A picture representing "An Exciting Event in My Life"
2. A self portrait.
3. One of the following:
    a. Design a travel poster and give the information which you consider relevant.
    b. Design and render in perspective a product such as an automobile, home appliance, or telephone.

Facilities are available at the Institute for removal of academic deficiencies.

Students who do not meet the above specific requirements may be admitted with the approval of the appropriate curriculum department head.

DIPLOMA PROGRAMS

The Diploma is a one year program designed to provide the student with the skills of his chosen trade.

Admission Requirements

To be admitted to the one-year Diploma programs the applicant must qualify as follows:

1. Be at least 18 years of age and have the ability to enter into or make advancement in the area in which enrolled.
2. Have satisfactorily completed a minimum of eight (8) units of accredited secondary school work. Those who have not successfully completed eight (8) units of such work will be required to take other standard and/or local institution tests.
3. Demonstrate by placement tests and student/counselor conferences aptitude to insure ability to meet job requirements in the desired trade.
4. Meet the specific requirements of the department to which he is applying. These are as follows:

Practical Nursing — An interview with a member of the Practical Nursing staff is required.

Students upon acceptance to the department must report the result of a physical examination by a licensed physician. The results are to be reported on forms provided by the Institute.

Dental Assisting — An interview with a member of the Dental Assisting staff is required. All Dental Assistant applicants must have a high school diploma or a N. C. approved equivalent education as required by the American Dental Association under which this program is accredited.

Students upon acceptance to the department must report the results of a physical and dental examination by licensed physicians. The results are to be reported on forms provided by the Institute.

Child Care — An interview with a member of the Child Care staff is required.

Students upon acceptance to the department must report the result of a physical examination by a licensed physician. The results are to be reported on forms provided by the Institute.

It is suggested that students should have completed one unit of Algebra.

Facilities are available at the Institute for removal of deficiencies.

Applicants should refer to page 20 for information about special materials and equipment required for their programs.

Applied Arts

Applied Arts consists of Commercial Art & Advertising Design, Audio-visual Technology, and Technical Illustration. These programs, for the first three quarters, have a common core curriculum. Beginning with the fourth quarter students will choose one of these programs for specialization.

Specific admission requirements are outlined on page 47.

AUDIOVISUAL TECHNOLOGY

Purpose

The Audiovisual Technology Program provides students with knowledge and skills in the production of communications media, including photography, film, graphic arts, television, sound recording, and various combinations of these media. Audiovisual courses include such subjects as materials and machines used in the field, specific audiovisual skills and their relationship to the learning process, and conversion of ideas into audio and/or visual materials. As a part of their course work, students create audiovisual materials for use in live teaching situations.

Job Description

Graduates will work in audiovisual or instructional resource centers of schools and colleges, or in commercial and industrial audiovisual departments, preparing training aids and advertising materials.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	101	Basic Drawing and Design	4	8	8
			10	8	14

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
DES	107	Life Drawing	2	4	4
DES	124	Type and Lettering	4	6	7
ART	106	Art History I	3	0	3
			12	10	17

Third Quarter			*C*	*L*	*CH*
DFT	101	Technical Drafting	3	6	6
DES	218	Commercial Graphics	3	6	6
DES	116	Basic Photography	2	4	4
SSC		Elective	3	0	3
			11	16	19

Fourth Quarter

			C	*L*	*CH*
SSC		Elective	3	0	3
ART	107	Art History II	3	0	3
PSY	108	Psychology of Communications	3	0	3
			9	0	9

Fifth Quarter

			C	*L*	*CH*
AVT	101	Transparency Production	2	2	3
DES	216	Photography II	3	4	5
AVT	120	Basic Electricity	2	2	3
BUS	102	Typewriting I	2	3	3
AVT	104	Sound Recording	2	2	3
			11	13	17

Sixth Quarter

			C	*L*	*CH*
AVT	102	Slide Production	2	2	3
AVT	103	Filmstrip Production	2	2	3
AVT	210	Equipment Repair	2	2	3
AVT	220	Information Resources	3	0	3
AVT	110	Office Machines & Filing	3	2	4
AVT	112	Teaching Methods	3	0	3
			15	8	19

Seventh Quarter

			C	*L*	*CH*
AVT	230	TV Production	2	2	3
AVT	235	Movie Making	2	2	3
AVT	240	Display Design	2	2	3
AVT	212	A-V Department Procedures	3	0	3
AVT	245	Work Experience	3	6	5
			12	12	17
		Total Credit Hours			112

ELECTIVES **Refer to page 56**

COMMERCIAL ART & ADVERTISING DESIGN

Purpose

Surveys have shown an increase in the demand for graduates possessing training in the field of Commercial Art and Advertising Design. The curriculum will prepare a graduate with a sound, well-rounded background for technical and creative achievement throughout his professional life. Design and illustration for commerce is continually advancing its standards, therefore, the background offered the student must be well-developed to prepare him for performance on a contemporary professional level. Graduates of this program will have an adequate background in illustration, layout and lettering, design, and production enabling them to be employed in some facet of Commercial Artistry.

Equipped with professional competence and the potential for continuing growth and improvement, graduates are qualified for employment in advertising agencies, design studios, department stores, industrial advertising departments, government agencies, newspapers, television studios, printing and publishing houses.

Job Description

The commercial artist or advertising designer creates and designs layouts and illustrations for printing, creates posters, signboards, billboards, and show cards. He may design and prepare charts, diagrams, sketches, and maps for publication and exhibition, perform responsible illustrative work for package design, photography, lettering, and art work for the printing processes. Opportunities for graduates of this program may be in advertising agencies, newspapers and magazines, television studios, industrial advertising departments and design studios, department stores, government agencies, or in printing and publishing houses.

SUGGESTED CURRICCLUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	101	Basic Drawing & Design	4	8	8
			10	8	14

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
DES	107	Life Drawing	2	4	4
DES	124	Type and Lettering	4	6	7
ART	106	Art History I	3	0	3
			12	10	17

Third Quarter

			C	L	CH
DFT	101	Technical Drafting	3	6	6
DES	218	Commercial Graphics	3	6	6
DES	116	Basic Photography	2	4	4
SSC		Elective	3	0	3
			11	16	19

Fourth Quarter

			C	L	CH
		Technical Elective	3	0	3
SSC		Elective	3	0	3
ART	107	Art History II	3	0	3
PSY	108	Psychology of Communication	3	0	3
DES	108	Illustration	4	4	6
			16	4	18

Fifth Quarter

			C	L	CH
ENG		Your option	3	0	3
DES	210	Advertising & Publication Design I	3	6	6
DES	240	Production I	3	6	6
		Technical Elective	3	0	3
			12	12	18

Sixth Quarter

			C	L	CH
ENG		Your option	3	0	3
DES	220	Advertising & Publication Design II	3	6	6
DES	242	Production II	3	6	6
DES	238	Case Studies	3	0	3
			12	12	18

Seventh Quarter

			C	L	CH
DES	230	Advertising & Publication Design III	3	6	6
DES	244	Production III	3	6	6
DES	239	Professional Practices & Procedures	3	6	6
			9	18	18
		Total Credit Hours			122

ELECTIVES Refer to page 56

TECHNICAL ILLUSTRATION

Purpose

The purpose of the illustrator is to provide communication between engineers who design equipment and those who use or service the products. Illustrations may appear in industrial catalogs, aircraft handbooks, training aids, engineering designs and tooling problems, assembly sheets, and promotional literature. They are generally drawn by one of the axonometric or perspective methods and may show part details, cutaway views, exploded assemblies, or part installations.

As American industry has grown, technical illustrators have become more important in providing illustrations to solve a great number of problems in design, manufacturing, assembly, operation, and maintenance of technical equipment. By the use of an illustration which is normally superior to the spoken or written word, illustrators can convey the information necessary to give a clear and concise description of a complicated form. The pictorial language is becoming more necessary because of the steadily increasing complexity of the machines of modern living. Technical illustration has evolved into an occupation that makes an important contribution to industry and to the strength of the nation.

Job Description

The technical illustrator has the ability to describe the shape, dimensions, assembly, and installation of an object. Information for illustrations is taken from blueprints, technical sheets, engineering sketches, photographs, or the actual parts. The technical illustrator must be able to visualize this technical data in three dimensions, judge what the best methods of presentation are, plan his layout, make an accurate drawing, and finish this drawing according to the commercial or military specifications to which he is working. In addition to being technically and artistically correct, the drawing must also be done within acceptable time limits.

He may lay out and draw schematic, perspective, orthographic, or pictorial views to depict function, relationship, and assembly sequence of parts and assemblies, such as gears, mechanisms, and instruments. He shades or colors drawings to emphasize details or to eliminate undesired background, using ink, crayon, airbrush, and overlays. Pastes instructions and comments in position on drawing. May draw cartoons and caricatures to illustrate operations in maintenance, and safety manuals or posters.

In most illustration departments, a new employee begins with the simple jobs and progresses to the most difficult ones as he gains confidence and experience.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	101	Basic Drawing & Design	4	8	8
			10	8	14

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
DES	107	Life Drawing	2	4	4
DES	124	Type and Lettering	4	6	7
ART	106	Art History I	3	0	3
			12	10	17

Third Quarter

			C	L	CH
DFT	101	Technical Drafting	3	6	6
DES	218	Commercial Graphics	3	6	6
DES	116	Basic Photography	2	4	4
SSC		Elective	3	0	3
			11	16	19

Fourth Quarter

			C	L	CH
SSC		Elective	3	0	3
ART	107	Art History II	3	0	3
PSY	108	Psychology of Communication	3	0	3
		Technical Elective	3	0	3
			12	0	12

Fifth Quarter

			C	L	CH
DES	250	Technical Illustration I	3	6	6
DES	253	Technical Rendering I	3	3	4
DES	248	Air Brush	3	3	4
ENG	103	Report Writing	3	0	3
			12	12	17

Sixth Quarter

			C	L	CH
DES	251	Technical Illustration II	3	6	6
DES	254	Technical Rendering II	3	3	4
DES	245	Architectural Rendering I	3	3	4
MEC	101	Machine Processes	0	6	2
			9	18	16

Seventh Quarter

			C	L	CH
DES	252	Technical Illustration III	3	6	6
DES	255	Technical Rendering III	3	3	4
DES	246	Architectural Rendering II	3	3	4
DFT	204	Descriptive Geometry	2	4	4
			11	16	18

Total Credit Hours 113

ELECTIVES Refer to page 56

ELECTIVES — APPLIED ARTS

REQUIRED of all Applied Art students. Four English courses — English 101, English 102 and any *two* listed below.

ENG	103	Report Writing	3	0	3
ENG	204	Oral Communication	3	0	3
ENG	206	Business Communication	3	0	3
ENG	208	Reading Enrichment	3	0	3
ENG	210	Advanced Writing	3	0	3
ENG	212	Journalism I	3	0	3
ENG	214	Copywriting I	3	0	3
ENG	216	Copywriting II	3	0	3

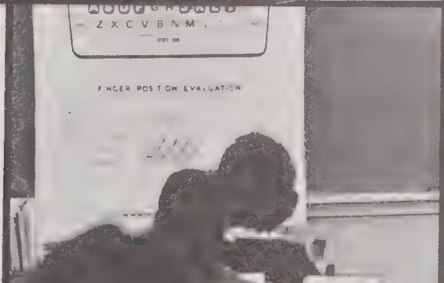
REQUIRED of all Applied Art students. Any *two* of the courses listed below.

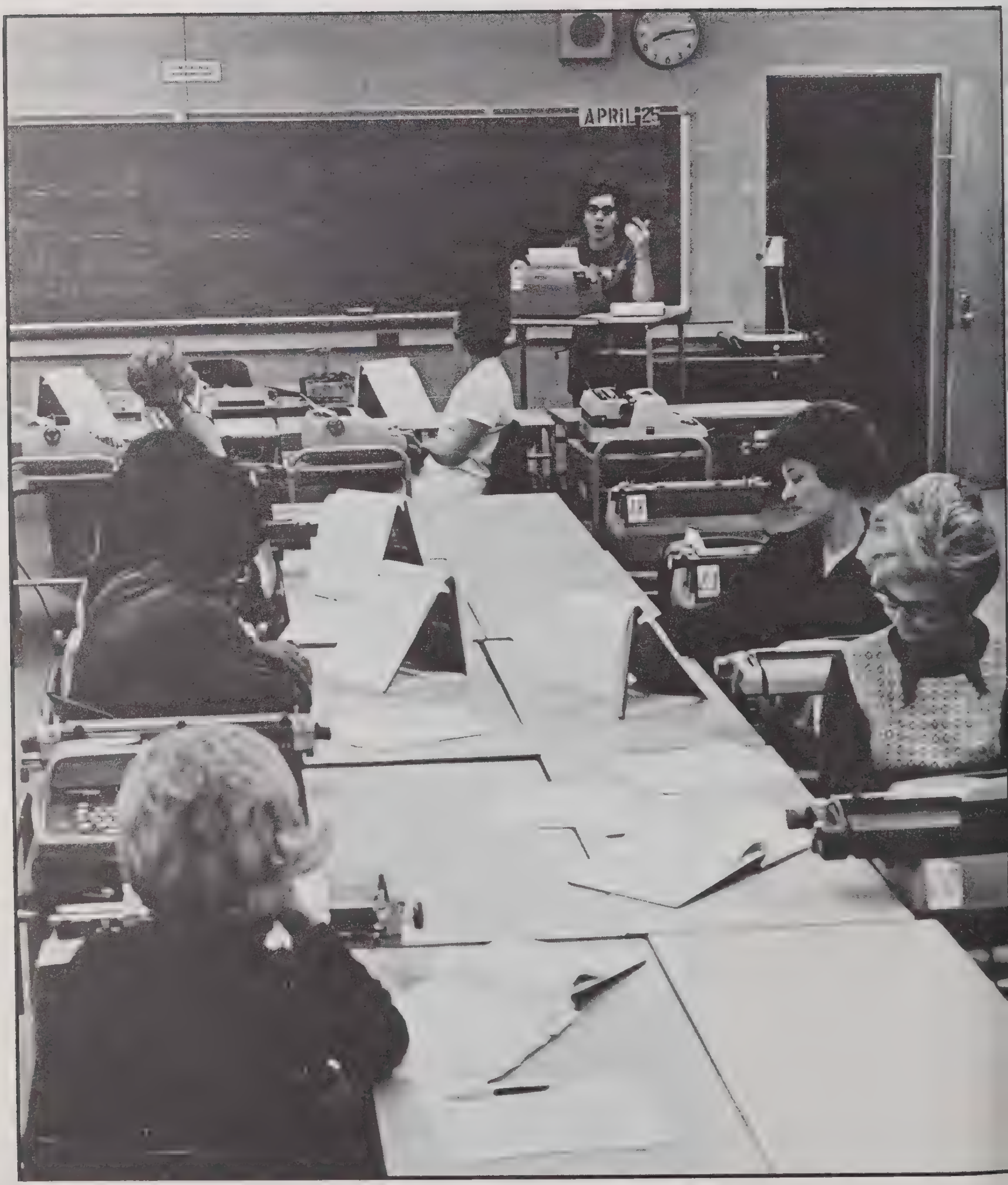
POL	201	U. S. Government	3	0	3
PSY	112	Personality Development	3	0	3
PSY	206	Applied Psychology	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	203	Environmental Studies	3	0	3
SSC	205	American Institutions	3	0	3

TECHNICAL ELECTIVES for the Commercial Art curriculum and Technical Illustration curriculum may be selected from the following courses. The schoool will determine which of these are to be offered in any quarter of the program.

DES	203	Computer Graphics	3	0	3
DES	211	Three Dimensional Design	2	2	3
ART	231	Painting w/polymers	2	6	5
ART	238	Selective Media I	2	3	3
ART	239	Selective Media II	2	3	3
ART	240	Metal Sculpturing	1	3	2
DES		Perspective I	4	2	5
DES		Perspective II	4	2	5
DES		Perspective III	4	2	5
DES	262	Technical Publications	2	3	3
DES	248	Air Brush	2	3	3
DES	249	Architectural Rendering	2	3	3

Business Technologies


ZXCVBNM
FINGER POSITION EVALUATION


APRIL 25

ACCOUNTING

Purpose of Curriculum

Accounting is one of the fastest growing employment fields in America today, and the job outlook for good accountants seems bright for many years to come. These opportunities result from the tremendous business and industrial expansion in all parts of the country. Because of this emphasis, there is a growing need for trained people in the area of accounting to help managers keep track of a firm's operation. The Accounting Curriculum is designed to fill this need by offering students the necessary accounting theories and skills for the entry into the accounting profession.

The specific objectives of the Accounting Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding of the fundamentals of accounting and analysis of financial statements.
3. Understanding and skill in effective communications for business.

Job Description

The duties and responsibilities of an accountant vary somewhat in different firms. Some of the things an accountant might do are: record transactions, render periodic reports, maintain cost records, make special reports, complete tax returns, audit the books, and advise management in areas of financial affairs.

The graduate of the Accounting Curriculum may qualify for various jobs in business and industry leading to any of the following accounting positions: accounting clerk, payroll clerk, accounting machine operator, auditor, and cost accountant. This training plus further experience should prepare them to become office managers, accounting supervisors, and to fill other responsible positions in a business firm.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
BUS	101	Introduction to Business	5	0	5
ENG	101	Composition I	3	0	3
MAT	110	Business Mathematics	5	0	5
BUS	110	Office Machines	2	3	3
BUS	115	Business Law	3	0	3
			18	3	19

Second Quarter

			C	*L*	*CH*
BUS	102	Typewriting	2	3	3
ENG	102	Composition II	3	0	3
BUS	116	Business Law	3	0	3
ECO	102	Economics	3	0	3
BUS.	120	Accounting I	5	2	6
			16	5	18

Third Quarter

			C	*L*	*CH*
ECO	104	Economics	3	0	3
BCS	121	Accounting II	5	2	6
ENG	204	Oral Communication	3	0	3
BUS	226	Payroll Records & Accounting	3	0	3
EDP	103	Introduction to Computer Concepts	4	0	4
			18	2	19

Fourth Quarter

			C	*L*	*CH*
BUS	222	Intermediate Accounting I	5	2	6
ENG	103	Report Writing	3	0	3
BUS	123	Finance	3	0	3
BUS	271	Office Management	3	0	3
		Business Elective	3	0	3
			17	2	18

Fifth Quarter

			C	*L*	*CH*
ENG	206	Business Communications	3	0	3
BUS	223	Intermediate Accounting II	5	2	6
BUS	229	Taxes	3	2	4
		Social Science Elective	3	0	3
			14	4	16

Sixth Quarter

			C	*L*	*CH*
BUS	267	Auditing	3	2	4
BUS	225	Cost Accounting	3	2	4
		Business Elective	3	0	3
		Social Science Elective	3	0	3
			12	4	14

Business Electives

Free electives — May be chosen from the B.A. curriculum or the D. P. curriculum.

BUSINESS ADMINISTRATION

Purpose

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this State, business has become more competitive and automated. Better opportunities in business will be filled by students with specialized education beyond the high school level. The Business Administration Curriculum is designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in many phases of administrative work that might be encountered in the average business.

The specific objectives of the Business Administration Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding our economy through study and analysis of the role of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.
4. Understanding and skill in effective communication for business.
5. Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

Job Description

The graduate of the Business Administration Curriculum may enter a variety of career opportunities from beginning sales person or office clerk to manager trainee. The duties and responsibilities of this graduate vary in different firms. These encompassments might include: making up and filing reports, tabulating and posting data in various books, sending out bills, checking calculations, adjusting complaints, operating various office machines, and assisting managers in supervising. Positions are available in businesses such as advertising; banking; credit; finance; retailing; wholesaling; hotel, tourist, and travel industry; insurance; transportation; and communications.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
BUS	115	Business Law	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
			18	3	19

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
		Business Elective	3	0	3
BUS	120	Accounting I	5	2	6
ECO	102	Economics	3	0	3
BUS	116	Business Law	3	0	3
			17	2	18

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	121	Accounting II	5	2	6
ECO	104	Economics	3	0	3
BUS	110	Office Machines	2	2	3
BUS	239	Marketing	5	0	5
			18	4	20

Fourth Quarter

			C	L	CH
EDP	103	Introduction to Computer Concepts	4	0	4
ENG	103	Report Writing	2	2	3
BUS	123	Finance I	3	0	3
BUS	272	Supervision	3	0	3
		Business Elective	3	0	3
			15	2	16

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	243	Advertising	3	0	3
BUS	235	Business Management	3	0	3
BUS	124	Finance II	3	0	3
		Social Science Elective	3	0	3
		Business Elective	3	0	3
			18	0	18

Sixth Quarter

			C	L	CH
BUS	229	Taxes	3	2	4
BUS	271	Office Management	3	0	3
BUS	232	Sales	3	0	3
		Social Science Elective	3	0	3

Business Elective	3	0	3
	15	2	16
Total			107

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
BUS	101	Introduction to Business	5	0	5
ENG	101	Composition	3	0	3
ECO	102	Economics	3	0	3
			11	0	11

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
ECO	104	Economics	3	0	3
BUS	115	Business Law	3	0	3
		Business Elective	3	0	3
			12	0	12

Third Quarter

			C	L	CH
BUS	116	Business Law	3	0	3
MAT	110	Business Mathematics	5	0	5
ENG	204	Oral Communications	3	0	3
			11	0	11

Fourth Quarter

			C	L	CH
BUS	102	Typewriting I	2	3	3
BUS	123	Finance I	3	0	3
		Social Science Elective	3	0	3
			8	3	9

Fifth Quarter

			C	L	CH
BUS	120	Accounting	5	2	6
BUS	124	Finance II	3	0	3
ENG	206	Business Communication	3	0	3
			11	2	12

Sixth Quarter

			C	L	CH
BUS	121	Accounting	5	2	6
EDP	103S	Introduction to Computer Concepts	4	0	4
			9	2	10

Seventh Quarter

			C	L	CH
BUS	110	Office Machines	2	2	3
BUS	229	Taxes	3	2	4
			5	4	7

Eighth Quarter

			C	L	CH
BUS	243	Advertising	3	0	3
BUS	239	Marketing	5	0	5
			8	0	8

Ninth Quarter

			C	L	CH
BUS	232	Sales Development	3	0	3
BUS	272	Principles of Supervision	3	0	3
		Business Elective	3	0	3
			9	0	9

Tenth Quarter

			C	L	CH
BUS	271	Office Management	3	0	3
BUS	235	Business Management	3	0	3
		Social Science	3	0	3
		Business Elective	3	0	3
			12	0	12

Eleveth Quarter

			C	L	CH
		Business Elective	3	0	3
ENG	103	Report Writing	2	2	3
			5	2	6
		Total			107

ELECTIVES

Electives for the *Business Administration Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

MAJOR

BUS	247	Business Insurance	3	0	3
BUS	233	Personnel Management	3	0	3
BUS	245	Retailing	3	0	3
BUS	237	Wholesaling	3	0	3
BUS	217	Business Law	3	0	3
BUS	300	Current Trends in Business	2	3	3
BUS	112	Records Management	3	0	3
BUS	122	Accounting III	5	0	5
BUS	225	Cost Accounting	3	2	4
BUS	226	Payroll Records and Accounting	3	0	3
BUS	242	Sales Promotion	3	0	3
BUS	250	Real Estate	3	0	3

SOCIAL SCIENCE

			CL	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	206	Applied Psychology	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

BUSINESS DATA PROCESSING

The processing of data by electronic equipment has created vast changes in business and industry. Nowhere are these changes more apparent than in the occupations associated with the handling of business information. Much of the routine and time-consuming work of obtaining, compiling and reporting the information necessary for a business to operate can now be adapted to machine processing.

This curriculum is designed to give the student (1) an understanding of the principles of business operation, (2) experience with techniques and handling business data, and (3) functional competence in the application of data processing systems, and experience in computer programming of business records and accounts, inventory, sales, and income and expenditures essential to business and to management decisions.

Emphasis is upon business data processing and use of machines in solving business problems.

Job Description

The business data processing specialist applies currently available programming techniques to a defined problem with minimum supervision. He analyzes and defines systems requirements to develop a program for electronic data processing; conducts detailed analyses of systems requirements, and develops all levels of block diagrams and logical flow charts. Translates program details into coded instructions; establishes test data; tests, refines, and revises program and documents the procedures. Ascertains if other combinations of instruction would achieve greater flexibility, better machine utilization, or more dependable results. He may prepare a complete set of operating instructions for use by a console operator; on occasion, operates the console in processing program.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
EDP	103	Introduction to Computer Concepts	4	0	4
EDP	110	Functional Wiring	3	2	4
MAT	101	Technical Mathematics	5	0	5
ENG	101	Composition I	3	0	3
			15	2	16

Second Quarter

			C	L	CH
EDP	114	Compiler Language I	2	4	4
MAT	112	Business Mathematics	5	0	5
BUS	120	Accounting I	5	2	6
ENG	102	Composition II	3	0	3
			15	6	18

Third Quarter

			C	L	CH
EDP	116	Assembler Language	2	4	4
BUS	121	Accounting II	5	2	6
MAT	214	Statistics	5	0	5
ENG	103	Technical Report Writing	2	2	3
			14	8	18

Fourth Quarter

			C	L	CH
EDP	118	Compiler Language II	2	4	4
EDP	211	Data Processing Application I	2	4	4
EDP	213	Computer Systems I	2	2	3
BUS	225	Cost Accounting	3	2	4
BUS	115	Business Law I	3	0	3
			12	12	18

Fifth Quarter

			C	L	CH
EDP	212	Data Processing Application II	2	4	4
EDP	214	Computer Systems II	2	2	3
ECO	102	Economics	3	0	3
		Elective—DP	3	0	3
		Elective	3	0	3
			13	6	16

Sixth Quarter

			C	L	CH
EDP	218	Data Processing Project	1	8	5
BUS	272	Supervision	3	0	3
ENG	204	Oral Communication	3	0	3
		Elective—Social Science	3	0	3
		Elective	3	0	3
			13	8	17
			Total		103

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
EDP	110	Functional Wiring	3	2	4
ENG	101	Composition I	3	0	3
ECO	102	Economics	3	0	3
			9	2	10

Second Quarter

			C	*L*	*CH*
EDP	103	Introduction to Computer Concepts	4	0	4
MAT	101	Technical Mathematics	5	0	5
			9	0	9

Third Quarter

			C	*L*	*CH*
EDP	114	Compiler Language I	2	4	4
MAT	112	Business Mathematics	5	0	5
			7	4	9

Fourth Quarter

			C	*L*	*CH*
EDP	116	Assembler Language	2	4	4
MAT	214	Statistics	5	0	5
			7	4	9

Fifth Quarter

			C	*L*	*CH*
EDP	118	Compiler Language II	2	4	4
BUS	120	Accounting I	5	2	6
			7	6	10

Sixth Quarter

			C	*L*	*CH*
EDP	213	Computer Systems I	2	2	3
BUS	121	Accounting II	5	2	6
			7	4	9

Seventh Quarter

			C	*L*	*CH*
EDP	214	Computer Systems II	2	2	3
BUS	225	Cost Accounting	3	2	4
			5	4	7

Eighth Quarter

			C	*L*	*CH*
EDP	211	Data Processing Application I	2	4	4
ENG	102	Composition II	3	0	3
		Social Science Elective	3	0	3
			8	4	10

Ninth Quarter

			C	*L*	*CH*
EDP	212	Data Processing Application II	2	4	4
BUS	272	Supervision	5	0	3
ENG	103	Technical Report Writing	2	2	3
			9	6	10

Tenth Quarter

			C	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	115	Business Law	3	0	3
		Elective — D. P.	3	0	3
		Elective	3	0	3
			12	0	12

Eleventh Quarter

			C	*L*	*CH*
EDP	218	Data Processing Project	1	8	5
		Elective	3	0	3
			4	8	8
		Total			103

ELECTIVES

Electives for the *Business Data Processing Curriculum* may be selected according to the needs of the student. The school may determine which of these are to be offered in any given quarter of the program.

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	Amercian Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

GENERAL OFFICE TECHNOLOGY

Purpose

More people are now employed in clerical occupations than in any other single job category. Automation and increased production will mean that these people will need more technical skills and a greater adaptability for diversified types of jobs.

The curriculum is designed to develop the necessary variety of skills for employment in the business world. Specialized training in skill areas is supplemented by related courses in mathematics, accounting, business law, and applied psychology.

Job Description

The graduate of the General Office Technology curriculum may be employed as an administrative assistant, accounting clerk, assistant office manager, bookkeeper, file clerk, machine transcriptionist, or a variety of other clerical-related jobs. Positions are available in almost every type of business, large or small.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
ECO	102	Economics	3	0	3
			18	3	19

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3	3
BUS	130	Secretarial Accounting	5	2	6
BUS	115	Business Law	3	0	3
BUS	112	Records Management I	3	0	3
			16	5	18

Third Quarter			*C*	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3	3

BUS	116	Business Law	3	0	3
BUS	111	Secretarial Office Machines	2	2	3
BUS	212	Machine Transcription	2	2	3
BUS	113	Records Management II	3	0	3
			15	7	18

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
EDP	103S	Concepts of Data Processing	4	0	4
BUS	205	Advanced Typewriting	2	3	3
BUS	213	Machine Transcription	2	2	3
BUS	232	Sales Development	3	0	3
		Business Elective	3	0	3
			16	7	19

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
		Social Science Elective	3	0	3
		Business Elective	6	0	6
			15	2	16

Sixth Quarter

			C	L	CH
BUS	211	Advanced Office Machines	2	2	3
BUS	272	Supervision	3	0	3
BUS	274	Secretarial Procedures II	3	2	4
BUS	105S	Typewriting Office Practice	2	3	3
		Business Elective	3	0	3
		Social Science Elective	3	0	3
			16	7	19
		Total			109

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
ECO	102	Economics	3	0	3
			8	3	9

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3°	3
BUS	115	Business Law	3	0	3
			8	3	9

Third Quarter

			C	*L*	*CH*
BUS	116	Business Law	3	0	3
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
			8	3	9

Fourth Quarter

			C	*L*	*CH*
BUS	112	Records Management I	3	0	3
BUS	205	Advanced Typewriting	2	3°	3
ENG	103	Report Writing	2	2	3
			7	5	9

Fifth Quarter

			C	*L*	*CH*
BUS	113	Records Management II	3	0	3
BUS	101	Introduction to Business	5	0	5
		Business Elective	3	0	3
			11	0	11

Sixth Quarter

			C	*L*	*CH*
MAT	110	Business Mathematics	5	0	5
EDP	103S	Introduction to Computer Concepts	4	0	4
			9	0	9

Seventh Quarter

			C	*L*	*CH*
BUS	130	Secretarial Accounting	5	2	6
BUS	212	Machine Transcription	2	2	3
			7	4	9

Eighth Quarter

			C	*L*	*CH*
BUS	213	Machine Transcription	2	2	3
BUS	111	Secretarial Office Machines	2	2	3
			4	4	6

Ninth Quarter

			C	*L*	*CH*
BUS	211	Advanced Office Machines	2	2	3
BUS	232	Sales Development	3	0	3
BUS	272	Principles of Supervision	3	0	3
			8	2	9

Tenth Quarter

			C	*L*	*CH*
PSY	112	Personality Development (or business elective)	3	0	3
ENG	206	Business Communication	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
		Social Science Elective	3	0	3
			12	2	13

Eleventh Quarter

			C	L	CH
PSY	206	Applied Psychology (or social science elective)	3	0	3
BUS	226S	Payroll Records and Accounting (or business elective)	3	0	3
		Business Elective	3	0	3
			9	0	9

Twelfth Quarter

			C	L	CH
BUS	274	Secretarial Procedures II	3	2	4
BUS	105S	Typing Office Production	2	3	3
			5	5	7
		Total			109

ELECTIVES

Electives for the *General Office Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

BUS	247	Business Insurance	3	0	3
BUS	245	Retailing	3	0	3
BUS	217	Business Law	3	0	3
BUS	215	Office Application	6	0	6
BUS	134	Personality Development	3	0	3
BUS	216	Office Reception Techniques	3	0	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

MEDICAL SECRETARY

Purpose

The demand for better qualified medical secretaries in our ever-expanding medical profession is becoming more acute. The purpose of this curriculum is to outline a training program that will provide specialized training in the accepted procedures required by the medical profession, and to enable persons to become proficient soon after accepting employment in the medical and health occupations.

The Medical Secretary Curriculum is designed to offer the students the necessary secretarial skills in typing, dictation, transcription, and terminology for employment in the medical profession. The special training in secretarial subjects is supplemented by related courses in mathematics, accounting, business law, and personality development.

Job Description

The graduate of the Medical Secretary Curriculum should have a knowledge of medical terminology, skill in dictation and accurate transcription of medical records, reports and letters. The duties of a medical secretary may consist of: taking dictation and transcribing letters, memoranda and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments. The graduate may enter a secretarial position in a variety of offices such as physicians', private and public hospitals, federal and state health programs, and the drug and pharmaceutical industry.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand I	3	2	4
			18	5	20

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3°	3
BUS	107	Shorthand II	3	2	4
BUS	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
BUS	108	Shorthand III	3	2	4
BUS	111	Secretarial Office Machines	2	2	3
BUS	183	Terminology and Vocabulary	3	0	3
			13	7	16

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
BUS	206M	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3°	3
BUS	284	Terminology and Vocabulary	3	0	3
EDP	103S	Concepts of Data Processing	4	0	4
			14	7	17

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	207M	Dictation and Transcription	3	2	4
BUS	115	Business Law	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
BUS	112	Records Management I	3	0	3
		Social Science Elective	3	0	3
			18	4	20

Sixth Quarter

			C	L	CH
BUS	208M	Dictation and Transcription	3	2	4
BUS	274	Secretarial Procedures II	3	2	4
BUS	211	Advanced Office Machines	2	2	3
BUS	113	Records Management II	3	0	3
		Elective	3	0	3
			14	6	17
			Total		112

ELECTIVES

Electives for the *Medical Secretarial Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

MAJOR

			C	L	Cr
BUS	215M	Office Application	6	0	6
ECO	108	Consumer Economics	3	0	3
ECO	102	Economics	3	0	3
BUS	134	Personality Development	3	0	3
BUS	116	Business Law	3	0	3
BUS	105S	Typing Office Production	2	3	3

SOCIAL SCIENCE

			C	L	Cr
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

TECHNICAL SECRETARY

Purpose

The Technical Secretary Curriculum is designed to prepare a student for a position in the office of a firm dealing in research development and production in the scientific fields. The curriculum offers students the necessary secretarial skills and the required background of understanding and appreciation of the scientific method, and beginnings of a technical vocabulary and a feeling of respect for accuracy that will be essential in later work in the field.

Job Description

Graduates of this program may qualify for employment as stenographer-secretaries, technical secretaries, and possibly as private secretaries. They are in demand where engineers and other technical personnel find a need for secretarial help who can understand the specialized language of Electrical, Mechanical, Civil, or Chemical Engineers. The duties of an engineering and technical secretary may consist of taking dictation and transcribing letters, memoranda and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments. Graduates of this program, since they have received a background of science and engineering terminology in addition to their business background, are admirabiy prepared to work with engineering reports, records and correspondence.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand I	3	2	4
			18	5	20

Second Quarter

			C	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3	3
BUS	107	Shorthand II	3	2	4
BUS	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

Third Quarter

			C	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
BUS	108	Shorthand III	3	2	4
BUS	111	Secretarial Office Machines	2	2	3
BUS	115	Business Law	3	0	3
			13	7	16

Fourth Quarter

			C	*L*	*CH*
ENG	103	Report Writing	2	2	3
BUS	206T	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3°	3
EDP	103	Concepts of Data Processing	4	0	4
		Elective	3	0	3
			14	7	17

Fifth Quarter

			C	*L*	*CH*
ENG	206	Business Communication	3	0	3
BUS	207T	Dictation and Transcription	3	2	4
BUS	214	Secretarial Procedures I	3	2	4
BUS	112	Records Management I	3	0	3
		Social Science Elective	3	0	3
		Elective	3	0	3
			18	4	20

Sixth Quarter

			C	*L*	*CH*
BUS	208T	Dictation and Transcription	3	2	4
BUS	274	Secretarial Procedures II	3	2	4
BUS	211	Advanced Office Machines	2	2	3
BUS	113	Records Management II	3	0	3
		Elective	3	0	3
			14	6	17
		Total			109

ELECTIVES

Electives for the *Technical Secretarial Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

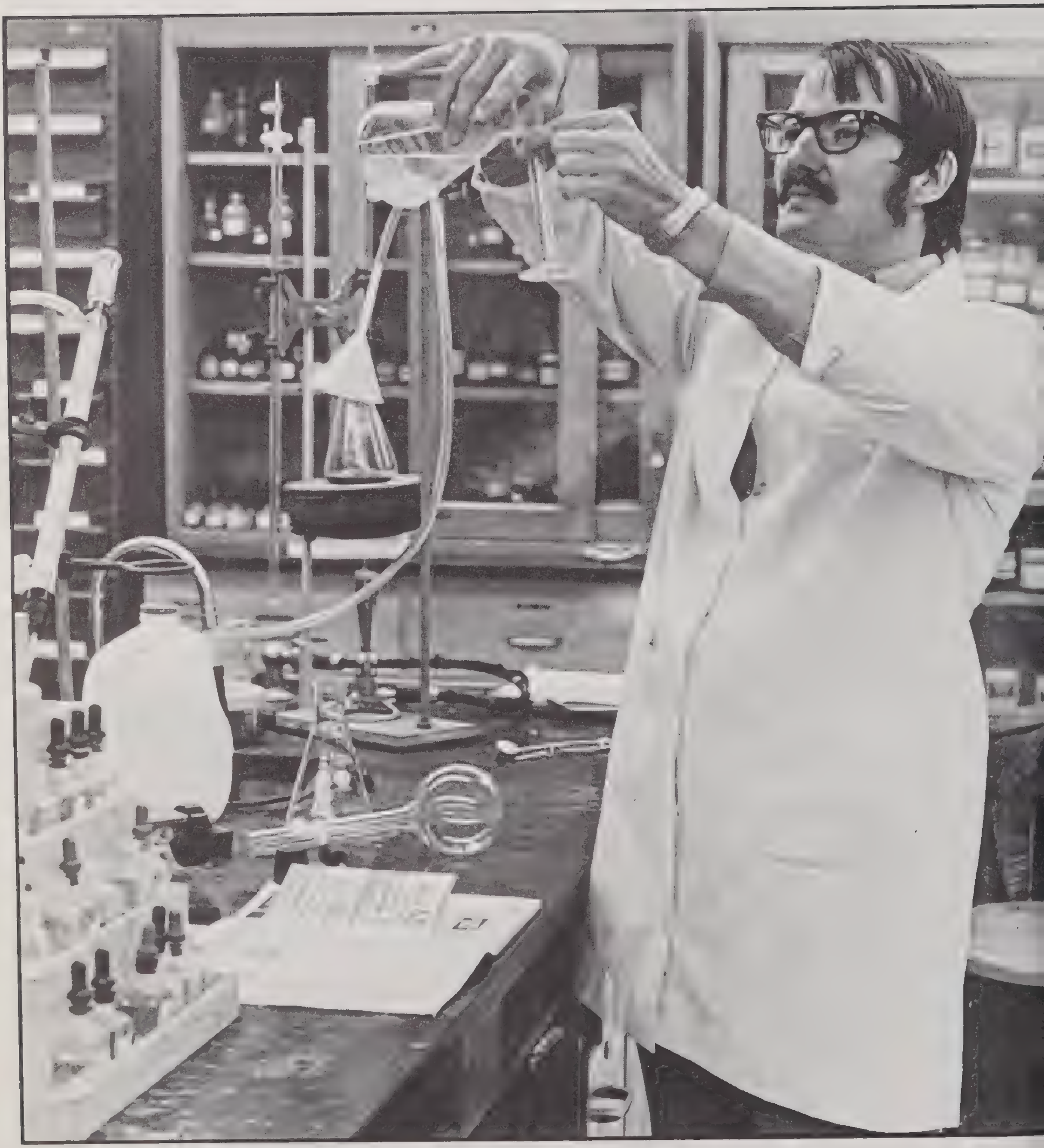
TECHNICAL SECRETARY

			C	*L*	*CH*
BUS	134	Personality Development	3	0	3
ECO	102	Economics	3	0	3
BUS	215T	Office Application	6	0	6
ECO	108	Consumer Economics	3	0	3
BUS	116	Business Law	3	0	3
BUS	105S	Typing Office Production	2	3	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

Engineering Technology



CHEMICAL TECHNOLOGY

Purpose

Chemical technicians may be thought of as practical laboratory technicians. The program of instruction in this curriculum is designed to educate students in basic chemistry, mathematics and technical communications. Technical knowledge and laboratory techniques are emphasized and a relationship between the theoretical and practical is maintained.

The curriculum objectives are to prepare persons to serve three distinct roles: (1) research assistant to a chemist in the laboratory; (2) planning and production assistant to chemical engineers in converting the research chemist's discoveries into actual industrial production; and (3) quality control technicians. Research laboratory assistants must be well grounded in chemical analysis, testing and synthesis. Chemical planning and production assistants must have command of a basic knowledge of chemical processing and ability to use main types of instruments, equipment and machinery for making chemical products. Quality control technicians should be able to use their basic knowledge to make tests to determine if raw materials and production follow desired specifications.

Job Description

Chemical technicians work for private industries, for the government or in university or hospital research centers. Duties of the chemical technician vary, depending on the organization for whom they work, the area they specialize in, and the projects on which they work. They use their basic knowledge and highly developed laboratory skills to carry our or assist with experiments, tests, and procedures which result from the more abstract work and thinking of chemists and chemical engineers.

They may be employed in analytical laboratories, where they work with complex substances, determining what quantities and combinations of chemical elements and compounds they may contain. They may also be employed in industry to perform tests during large-scale factory production of chemical products. Technicians may perform many of the chemical and mechanical procedures that help the industrial engineer to translate laboratory experiments into factory techniques capable of large quantity production. The chemical technician prepares laboratory test reports, checks analyses with specifications, and consults with laboratory supervisors. This field offers opportunities to women as well as men. The long range outlook for Chemical Technicians is excellent.

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
MAT	101	Technical Math	5	0	5
DFT	101	Technical Drafting	2	4°	3
CHM	111	General Chemistry I	4	3°	5
EDP	103	Introduction to Computer Concepts	4	0	4
			18	7	20

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
MAT	102	Technical Math	5	0	5
PHY	101	Properties of Matter	3	2	4
EIC	101	Fundamentals of Electricity	4	4°	6
		Social Science Elective	3	0	3
			18	6	21

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
MAT	103	Technical Math	5	0	5
PHY	102	Work Energy and Power	3	2	4
DFT	102	Technical Drafting	2	4	3
		Social Science Elective	3	0	3
			16	6	18

Fourth Quarter

			C	L	CH
CHM	112	General Chemistry	6	4	8
CHM	250	Qualitative Analysis	4	4	6
PHY	104	Light and Sound	3	2	4
			13	10	18

Fifth Quarter

			C	L	CH
CHM	121	Quantitative Analysis I	3	6	5
CHM	231	Organic Chemistry I	3	6°	5
CHM	227	Physical Chemistry	3	2	4
			9	14	14

Sixth Quarter

			C	L	CH
CHM	222	Quantitative Analysis II	2	9	5
CHM	232	Organic Chemistry II	3	6	5
CHM	241	Industrial Chem. Analysis I	2	6	4
			7	21	14

Seventh Quarter

			C	L	CH
CHM	233	Organic Chemistry III	3	6	5
CHM	242	Industrial Chem. Analysis II	3	12	7
ENG	103	Report Writing	2	2	3
			8	20	15
		Total			120

ELECTIVES

Electives for the *Chemical Technology Curriculum* may be selected from the following courses. The school may determine which of these are to be offered in any given quarter of the program.

TECHNICAL

MEC	116	Engineering Materials	3	0	3
MAT	201	Technical Mathematics	5	0	5
MAT	219	Differential Equations	5	0	5
PHY	231	Fluid Mechanics	3	0	3
CHM	252	Chemistry of Living Systems	3	2	4

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
ISC	201	Industrial Organization and Management	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

DRAFTING & DESIGN TECHNOLOGY

Accredited by the Engineer's Council for Professional Development

Purpose

This curriculum guide was prepared for the purpose of outlining a training program for students of mechanical drafting and design technology. There are certain identifiable duties which are common to all technicians of this general classification and which comprise the basic areas of technical knowledge they need. This curriculum has been designed for training persons in the accepted performance of these basic duties that will be assigned, and to enable the individual student to become proficient in a short time after he becomes employed in the industry.

Courses in general education have been included to give a student the assurance and understanding that comes with education upon a broad base. The technician associates with many levels of thought and expression — administrative personnel, scientists, engineers, skilled workmen — and must be able to communicate effectively with all levels. Courses containing essential information from related subject areas, such as mathematics, physics, and mechanics have been included in order to provide the student a better academic base for his training. Emphasis is placed upon ability to think and plan, as well as drafting procedures and techniques.

Job Description

Mechanical drafting and design technicians are concerned with the preparation of drawings for design proposals, for experimental models and items for production use.

These technicians perform many aspects of drafting in a specialized field, such as the developing of the drawing of a section, sub-assembly or major component. Investigating design factors and availability of material and equipment, production methods and facilities are frequent assignments. They assist in the design of units and controls from specifications by utilizing drawings of existing units and reports on functional performance. They may draw components in industrial fields based on engineers original design concepts or specific ideas. Also, they may be assigned as coordinators for the execution of related work of other design, production, tooling, material and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings.

These technicians are employed in many types of manufacturing, fabrication, research development and service industries. Substantial numbers also are employed in communications, transportation, public utilities, consulting engineering firms, and federal, state, and local governments.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
CHM	111	General Chemistry	4	3	5
ENG	101	Composition I	3	0	3
DFT	101	Technical Drafting	2	4	3
MAT	101	Technical Mathematics	5	0	5
MEC	101	Machine Processes	0	6	2
			14	13	18

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
MAT	102	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
			15	6	18

Third Quarter			*C*	*L*	*CH*
MEC	102	Machine Processes	0	6	2
ENG	204	Oral Communication	3	0	3
DFT	102	Technical Drafting	2	4	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Work, Energy & Power	3	2	4
			13	12	17

Fourth Quarter			*C*	*L*	*CH*
PHY	104	Light & Sound	3	2	4
ENG	103	Report Writing	2	2	3
DFT	103	Technical Drafting	1	6	3
PHY	106	Applied Mechanics	5	0	5
MEC	210	Physical Metallurgy	3	3	4
			14	13	19

Fifth Quarter			*C*	*L*	*CH*
DFT	201	Technical Drafting	2	6	4
DFT	204	Descriptive Geometry	2	4	4
MEC	205	Strength of Materials	3	2	4
MEC	211	Physical Metallurgy	3	3	4
			10	15	16

Sixth Quarter

			C	L	CH
DFT	205	Design Drafting I	2	6	4
DFT	211	Mechanisms	3	2	4
		Social Science Elective	3	0	3
EDP	103	Introduction to Computer Concepts	4	0	4
			12	8	15

Seventh Quarter

			C	L	CH
DFT	206	Design Drafting II	2	6	4
MEC	235	Hydraulics & Pneumatics	3	3	4
		Technical Elective	0	0	4
		Technical Elective	0	0	4
		Social Science Elective	3	0	3
			8	9	19
			Total		122

ELECTIVES

Electives for the *Drafting & Design Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

			C	L	Cr
DFT	212	Jig and Fixture Design	2	6	4
MEC	237	Control Systems	2	4	4
ISC	201	Industrial Organization and Management	3	0	3
DES	240	Senior Project	2	6	4

SOCIAL SCIENCE

			C	L	Cr
SSC	203	Environmental Studies	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3

ELECTRONICS ENGINEERING TECHNOLOGY

Accredited by the Engineer's Council for Professional Development

Purpose

The field of electronics has developed at a rapid pace since the turn of the century. For many years the major concern of electronics was in the area of communications. Developments during World War II and in the period since have revolutionized production techniques. New industries have been established to supplement the need and demand for electronics equipment.

Many opportunities exist for men and women with a technical education in electronics. This curriculum provides a basic background in electronic related theory with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may take their place as an assistant to an engineer, or as a liaison between the engineer and the skilled craftsman.

Job Description

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance or sales. He may be an assistant to an engineer, an engineering aide, laboratory technician, supervisor or equipment specialist. His training is similar to that of an engineer, but in less depth and more practical in application. He can function as a liaison between an engineer and the skilled craftsman.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
EDP	104	Introduction to Electronic Data Processing Systems	3	2	4
MAT	101	Technical Mathematics	5	0	5
MEC	101	Machine Processes	0	6°	2
			15	12	20

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
CHM	111	General Chemistry	4	3°	5
DFT	101	Technical Drafting	2	4°	3
MAT	102	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
			17	9	20

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
ELC	102	Fundamentals of Electricity	4	6°	6
DFT	102	Technical Drafting	2	4°	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Work, Energy & Power	3	2	4
			17	12	21

Fourth Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
ELN	101	Electronic Instruments and Measurements	1	6°	3
ELN	105	Control Devices	5	6°	7
PHY	104	Light & Sound	3	2	4
			11	16	17

Fifth Quarter

			C	L	CH
ELN	205	Applications of Vacuum Tubes and Transistors	5	6°	7
ELN	214	Wave Shaping & Pulse Circuits	2	3°	3
MAT	201	Technical Mathematics	5	0	5
ELN	210	Semiconductor Circuit Analysis	5	3°	6
			17	12	21

Sixth Quarter

			C	L	CH
ELN	215	Wave Shaping & Pulse Circuits	2	3°	3
ELN	208	Solid State & Thin Film Devices	5	2	6
		Social Science Elective	3	0	3
		Technical Elective	6	0	6
			16	5	18

Seventh Quarter

			C	L	CH
ELN	245	Electronic Design Project	0	4	2
ELN	227	UHF & Microwave Systems	5	4	7
ELN	240	Digital Computers	3	0	3
		Social Science Elective	3	0	3
		Technical Elective	5	0	5
			16	8	20
		Total			137

ELECTIVES

Electives for the *Electronics Technology Curriculum* may be selected from the following courses. The school will determine which of those are to be offered in any given quarter of the program.

TECHNICAL

			C	L	CH
ELN	220	Electronic Systems	5	6	7
ELN	230	Television Systems	4	6	7
MAT	208	Calculus & Laplace Transform for Electronics	5	0	5
MAT	214	Statistics	5	0	5

MAT	230	Boolean Algebra with Computer Applications	5	0	5

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

INDUSTRIAL ENGINEERING TECHNOLOGY

Purpose

The Industrial Engineering Technician is trained in the planning, functioning and controlling of the operation of an industrial enterprise for its profitable and continued operation.

New firms moving into North Carolina and established firms expanding their facilities in recent years have created increased demands for personnel at all levels of production.

Of particular significance as determined by the Employment Security Commission of North Carolina is the need for over 2000 technicians trained in Industrial Engineering, Quality Control and Production Planning.

A graduate of the Industrial Engineering Technology curriculum should have a basic knowledge of engineering at the technology level with specific skills in performing industrial engineering functions.

This, with the probable in-plant training of a particular company, should make the graduate a valuable employee in any one of the several thousand firms in North Carolina alone.

Job Description

The Industrial Engineering Technician studies and records time, motion, methods, and speed involved in performance of maintenance, production, clerical, and other worker operations to establish standard production rate and to improve efficiency. Prepares charts, graphs, and diagrams to illustrate work flow, routing, floor layouts, material handling, and machine utilization. Observes workers operating equipment or performing tasks to determine time involved and fatigue rate, using stop watch, motion-picture camera, electrical recorder, and similar equipment. Recommends revision of methods of operation or material handling, alterations in equipment layout or other changes to increase production or improve standards. Aids in planning work assignments in accordance with worker performance, machine capacity, production schedules, and anticipated delays. May be designated according to type of studies analyzed as Methods-Study Analyst; Motion-Study Analyst; Time-Study Analyst 1.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
DFT	101	Technical Drafting	2	4	3

MAT	101	Technical Math	5	0	5
CHM	111	General Chemistry	4	3	5
EDP	103	Introduction to Computer Concepts	4	0	4
			18	7	20

Second Quarter

			C	*L*	*CH*
ENG	102	Composition II	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
MAT	102	Technical Math	5	0	5
PHY	101	Property of Matter	3	2	4
		Social Science Elective	3	0	3
			16	8	21

Third Quarter

			C	*L*	*CH*
ENG	204	Oral Communication	3	0	3
PHY	102	Work, Energy Power	3	2	4
MAT	103	Technical Math	5	0	5
DFT	102	Technical Drafting	2	4	3
		Social Science Elective	3	0	3
			16	6	18

Fourth Quarter

			C	*L*	*CH*
MEC	111	Manufacturing Processes	3	3	4
ISC	102	Industrial Safety	3	0	3
ISC	120	Principles of Industrial Management	3	2	4
BUS	123	Business Finance I	3	0	3
ISC	231	Manufacturing Cycles	5	0	5
			17	5	19

Fifth Quarter

			C	*L*	*CH*
MEC	112	Manufacturing Processes	3	3	4
ISC	202	Quality Control	3	2	4
ISC	210	Job Analysis and Evaluation	3	2	4
MEC	213	Production Planning	3	3	4
			12	10	16

Sixth Quarter

			C	*L*	*CH*
ISC	209	Plant Layout	3	2	4
ISC	211	Work Measurement	3	2	4
ISC	220	Management Problems	3	0	3
ENG	103	Report Writing	2	2	4
ECO	102	Economics	3	0	3
			14	6	18

Seventh Quarter

			C	*L*	*CH*
ISC	204	Value Analysis	3	0	3
ISC	240	Applied Problem in Industrial Management	3	6	5
		Technical Elective	2	2	4
		Technical Elective	3	3	4
			11	11	16
		Total			138

ELECTIVES

			C	L	CH
		Technical			
EDP	114	Compiler Language	2	2	4
MEC	235	Hydraulics and Pneumatics	3	3	4
MEC	237	Control Systems	2	4	4
		Social Science			
SSC	203	Environmental Studies	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
PSY	213	Advanced Psychology	3	0	3
POL	101	U. S. Government	3	0	3

FIRE SCIENCE

Purpose

The rapidly developing age of scientific developments changes the ways of man and continually brings about a need for further changes. The Public Fire Service is no exception. New chemicals that are volatile, pyrophonic, radioactive, and explosive are being transported and stored in every section of North Carolina.

Space Age Fire Service requires intelligent, courageous, and dedicated men. They must be willing to keep pace with the rapid technical changes and be able to cope with new problems that confront them. This is necessary not only to save the lives of others but also their own.

Rising cost and the increased demands on governmental budgets requires more efficient use of available funds, equipment, and manpower. The curriculum is designed to enable the individual to draw from a vast store of technical and professional knowledge to make decisions effectively both on and off the emergency scene. In this manner he may assist the economic life of the community through improved services to the public.

Through technical education, the individual requires specialized knowledge of this vital field of public service and develops specific competencies for the performance of fire service administrative and supervisory duties. The curriculum includes areas such as the scientific understanding of fire hazards and their control and general courses that prepare him to work harmoniously with people.

Job Description

The opportunities are excellent for the individual with adequate training and ability. Students seeking gainful employment may be hired by government agencies, industrial firms, educational organizations, and insurance rating organizations.

Employed persons should have opportunities for positions requiring increased skill and responsibility as they increase their job competence.

Developing fire fighting practice skills is not within the scope of this curriculum. These skills may be readily developed within the local fire department and from Fire Service Training courses available. An individual just entering the Fire Service Field may start as a firefighter at which time he will gain or improve his firefighting skills and an in-depth knowledge of specific equipment. With demonstrative abilities individuals may find positions as a fire department officer, and instructor, or supervisor in an industrial plant.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
ENG	101	Composition	3	0	3
BUS	272	Principles of Supervision	3	0	3
MAT	101	Technical Mathematics	5	0	5
FIP	115	Fire Prevention Programs	3	0	3
FIP	101	Introduction to Fire Protection Hazards	3	0	3
			17	0	17

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
PSY	206	Applied General Psychology	3	0	3
PHY	101	Properties of Matter	3	2	4
FIP	211	Grading of Fire Defenses	3	0	3
FIP	102	Municipal Fire Protection	3	0	3
			15	2	16

Third Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
FIP	105	Applied Electricity for Fire Protection	3	2	4
DFT	118	Drafting and Blueprint Interpretation	0	6	2
FIP	120	Municipal Finance	5	0	5
FIP	135	Training Programs and Methods of Instruction	3	0	3
			13	7	17

Fourth Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
CHM	101	Chemistry	4	2	5
FIP	201	Fire Detection and Investigation	3	0	3
FIP	230	Hydraulics and Water Distribution Systems	3	2	4
FIP	103	Construction Codes and Material Rating	2	2	3
			15	6	18

Fifth Quarter

			C	L	CH
FIP	220	Fire Fighting Strategy	3	2	4
FIP	218	Chemistry of Hazardous Material	3	2	4
FIP	231	Sprinkler and Standpipe Systems	3	2	4
FIP	208	Municipal Public Relations	3	0	3
		Technical Elective	3	0	3
		Social Science Elective	3	0	3
			18	6	21

Sixth Quarter

			C	*L*	*CH*
FIP	235	Inspection Principles and Practices	3	4	5
FIP	245	Automatic Alarm and Extinguishing System	3	2	4
BUS	233	Personnel Management	3	0	3
FIP	225	Fire Protection Law	3	0	3
		Social Science Elective	3	0	3
			15	6	18
		Total			107

ELECTIVES

Electives for the *Fire Science Technology Curriculum* may be selected from the following courses. The school will determine which of those are to be offered in any given quarter of the program.

TECHNICAL

FIP	205	Industrial Hazards	3	2	4
FIP	240	Multiple Line Insurance and Rating Schedules	4	0	4
FIP	216	Chemical & Radiation Hazards	3	2	0
FIP	226	Industrial Safety	3	0	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3

HUMAN SERVICES TECHNOLOGIES

*EARLY CHILDHOOD EDUCATION

Purpose

The demand for the skills of assistants in early childhood education is increasing rapidly for several reasons: (1) Recent legislation has provided the opportunity for all five-year-olds to attend public kindergarten, requiring the services of many new teaching assistants; (2) additional legislation has placed requirements for higher standards and increased numbers of staff in all child care facilities; (3) more mothers of preschool children are entering the labor force or returning to school and placing their children in group care situations; and (4) research and professional insights have placed greater emphasis on the child's first years as the strategic years in his development. As the need for services to children increases, the need for trained staff becomes more evident.

The purpose of the Early Childhood Education program is to prepare the personnel needed to effectively work with children individually, and in groups. The assistant must understand and be able to provide for the emotional, mental and physical needs of children from infancy to pre-adolescence. Planning and implementing a program rich in creative activities, music, science and art is as much a part of the work of the early childhood assistant as assisting children in the development of language and computation. Supervision of outdoor and indoor play activities, personal care and hygiene, and effective methods of discipline are also developed.

The graduate will also have had training in the administration and supervision of day care programs, and working with parents and community agencies. Throughout the program, students receive supervised laboratory experience which enables them to become skillful in providing the type of program which allows each child to develop his maximum potential.

Job Description

The early childhood assistant is prepared to accept employment in a variety of situations.

The graduates are prepared to become teachers' assistants in kindergarten programs and grades 1 to 3, and teachers in nursery school programs and programs designed to care for and develop the very young child from infancy through the toddler stage.

Employment may be found in recreation centers, camps, day care centers, residential homes for children, and the public schools.

Programs for the exceptional child and the developmentally handicapped also provide opportunities for the skilled early childhood assistant.

*Proposed.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
EDU	130	Programming for Young Children	3	3	4
EDU	132	Nutrition and Health	5	0	5
EDU	101	Activities for Young Children	5	0	5
EDU	135	Human Growth and Development	5	0	5
ENG	101	Composition I	3	0	3
			21	3	22

Second Quarter

			C	L	CH
EDU	140	Working with Young Children I	3	9	6
EDU	105	Science	3	2	4
EDU	103	Music in the Early Childhood Program	3	0	3
ENG	204	Oral Communication	3	0	3
SSC	201	Social Science	3	0	3
			15	11	19

Third Quarter

			C	L	CH
EDU	145	Working with Young Children II	3	9	6
EDU	148	Group Care of Infants	3	6	5
EDU	108	Art in Early Childhood Program	3	2	4
PSY	201	General Psychology	3	0	3
			14	17	19

Fourth Quarter

			C	L	CH
EDU	202	Seminar-Practicum in Pre School	4	15	9
EDU	204	Parent Education	3	0	3
ENG	207	Literature in Early Childhood Program	3	0	3
SSC	204	Families in American Culture	3	0	3
			14	15	18

Fifth Quarter

			C	L	CH
EDU	227	Programming Through Learning Resources	3	0	3
EDU	236	Human Growth and Development II	5	0	5
EDU	203	The Exceptional Child	3	12	7
SSC	207	The Child and Community Services	3	0	3
			15	15	20

Sixth Quarter

			C	L	CH
		Elective	3	0	3
EDU	252	Seminar-Practicum in the Elementary School	4	15	9
BUS	249	Administration and Supervision	5	0	5
EDU	250	Special Problems	3	0	3
			15	15	20
		TOTAL	88	77	113

Human Services

DENTAL ASSISTING

Purpose

Dental assisting is one of the fastest growing occupations for women today. The role of the dental assistant has evolved from that of receptionist only to that of a fully participating member of the dental team; primary emphasis is on chairside assisting, although she continues to perform numerous duties related to office management, patient relations, and laboratory procedures. The dental profession now recognizes the contribution the dental assistant can make to the extension of services and increased productivity of the dental office. Projected needs call for a fivefold expansion in numbers of graduates and continued improvement in the quality of training programs.

The specific objectives of the Dental Assisting Curriculum are to develop the following competencies:

1. Understanding of the business procedures of the dental office.
2. Understanding of principles and beginning skill in the procedures of chairside assisting, including effective patient relationships.
3. Understanding of principles and beginning skills in performance of selected laboratory procedures commonly carried out in the dental office.

Job Description

The duties of the dental assistant vary somewhat, depending on the number of auxiliary workers employed. In some offices the assistant is responsible for all three areas described below; in others, she may be responsible for only one area.

In rendering chairside assistance to the dentist, the dental assistant is responsible for placing instruments for use, keeping the operating field clear during treatment, preparing restorative materials and dental cements, passing materials and instruments during dental procedures, and care of the operatory after use. She may take X-rays of the teeth and apply fluorides under the direction of the dentist. In the laboratory of the dental office, she may make models of the teeth and mouth, cast inlays and crowns, process exposed X-ray films and mount finished X-rays. In acting as office manager and receptionist, she receives patients, arranges appointments, records treatment, keeps accounts, maintains inventories, and orders supplies.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		C	L	CH
DEN 1001	Introduction to Dental Assisting	2	0	2
DEN 1002	Dental Materials	1	9	5
DEN 1003	Preclinical Sciences I	3	3	4
ENG 1102	Communication Skills	3	0	3
PSY 1112	Personality Development	3	0	3
		12	12	17

Second Quarter

		C	L	CH
DEN 1004	Preclinical Sciences II	3	0	3
DEN 1005	Dental Office Management I	3	2	4
DEN 1006	Clinical Procedures I	3	6	5
DEN 1012	Dental Roentgenology	2	6	4
		11	14	16

Third Quarter

		C	L	CH
DEN 1013	Oral Health Education	1	2	2
DEN 1007	Clinical Procedures II	4	6	6
DEN 1008	Dental Office Management II	3	0	3
DEN 1009	Dental Office Practice I	0	12	4
BUS 1102	Typewriting	2	3	3
		10	23	18

Fourth Quarter

		C	L	CH
DEN 1010	Dental Office Practice II	0	27	9
ENG 1105	Written Communications	3	0	3
		3	27	12

PRACTICAL NURSING

Purpose

The accelerated growth in North Carolina and rapid advancement in medical technology demands well-trained, capable personnel for health service positions.

The aim of this program is to make available the opportunity for the interested male and female to prepare themselves for participation in the care of patients of all ages, in various states of dependency, and with a variety of health conditions.

Students are selected on the basis of interest in and aptitude for nursing, as determined by pre-entrance test, high school records, personal interviews, health reports, and character references.

Job Description

The Practical Nurse Education program is taught in a 4-quarter period of classroom instruction and supervised nursing practice.

Following a period of classroom instruction in fundamentals of nursing, and principles from the sciences, the student practices nursing skills under faculty supervision in the hospital areas. The student advances in her studies, and in the nursing care of patients of all ages through planned assignments in medical-surgical nursing, care of the mother and newborn infant, and the care of the sick child. Other learning opportunities are planned in community facilities.

The graduate practical nurse is eligible to take, and must pass, the North Carolina Board of Nursing Licensing examination for practical nurses in order to practice in North Carolina.

The LPN is qualified and prepared to function in a variety of situations: hospitals, nursing homes, clinics, doctors' offices, private duty nursing, and in public health programs. In all situations the LPN functions under the supervision of a registered nurse and/or a licensed physician.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		C	L	CL	CH
PNE 1001	Fundamentals of Health	2	0	0	2
PNE 1002	Basic Science	6	4	0	8
PNE 1003	Fundamentals of Practical Nursing	4	8	0	8
PSY 1101	Human Relations	3	0	0	3
		15	12	0	21

Second Quarter

		C	L	CL	CH
PNE 1013	Mental Health	3	0	0	3
*PNE 1006	Maternity Nursing	2	2	0	3
PNE 1005	Fundamentals of Medical-Surgical Nursing I	2	2	0	3
PNE 1004	Clinical Nursing Experience I	0	0	21	7
		7	4	21	16

Third Quarter

		C	L	CL	CH
*PNE 1007	Nursing of Children	2	2	0	3
PNE 1009	Medical-Surgical Nursing II	4	2	0	5
PNE 1008	Clinical Nursing Experience II	0	0	21	7
		6	4	21	15

Fourth Quarter

		C	L	CL	CH
ENG 1102	Communication Skills	3	0	0	3
PNE 1012	Advanced Medical-Surgical Nursing III	4	0	0	4
PNE 1014	Vocational Adjustments	2	2	0	3
PNE 1011	Clinical Nursing Experience III	0	0	21	7
		9	2	21	17

* A portion of the class may be scheduled to take these courses during another quarter.

CHILD CARE

Description

Child Care will provide training in the care and guidance of the preschool child. Graduates will be knowledgeable of the concepts of growth and development and the physical and emotional needs of young children. They will have skills in planning and implementing creative activities, a music and art program, and the development of language and communication skills for young children.

Graduates will also have training in the administration and supervision of day care programs and working with parents and community agencies to meet the individual needs of young children.

Employment may be found in day care centers, nurseries, kindergartens, institutions providing care to children with special needs, pediatric wards, schools, recreation centers and camps.

The curriculum is designed on a twelve-month schedule. Students successfully completing the program will be awarded a Diploma in Child Care.

SUGGESTED CURRICULUM BY QUARTERS

		C	*L*	*CH*
First Quarter				
EDU 1130	Day Care for Young Children	2	3°	4
EDU 1132	Health and Nutrition	4	3°	5
EDU 1101	Activities for Young Children	3	3°	4
EDU 1135	Human Growth and Development	5	3°	6
		14	11	19
Second Quarter				
EDU 1140	Working with the Young Child	5	3-9°	6-8
EDU 1120	Communicating Effectively with the Young Child	3	0	3
EDU 1103	Music inthe Early Childhood Program	3	3°	4
EDU 1105	Science inthe Early Childhood Program	3	3°	4
		14	15	17-19
Third Quarter				
EDU 1145	Working with the Young Child with Problems	5	3-9°	6-8
EDU 1123	Conceptual and Language Development	3	0	3
EDU 1148	Group Care of Infants	3	6	5
EDU 1108	Art in the Early Childhood Program	3	2	4
		14	17	18-20
Fourth Quarter				
EDU 1149	Adm. & Supv. in Pre-School Facility	3	2	4
EDU 1150	Seminar-Practicum in Early Childhood Education	4	6-15°	6-9
EDU 1125	Parent Education	3	0	3
EDU 1110	Literature in the Early Childhood Program	3	0	3
		13	17	16-19

Mechanical Occupations

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

Purpose

With the increase in the use of air conditioning and refrigeration, there is a great demand for trained personnel to design systems, to install and maintain equipment, and to supervise operations. Most new homes are built with central air conditioning, and many others are having air conditioning added. Transportation systems and food processing industries are requiring greater use of refrigeration for transit, storage and display of products. Virtually every business and industry is utilizing some air conditioning or refrigeration equipment which requires periodic servicing by a skilled mechanic or technician. This curriculum is designed to train each student to meet such needs to the maximum of his interest and ability.

Since the student may make a better choice of goals after gaining more specific knowledge of the subject matter, he is given a course of study with three discrete steps of achievement. A particular option may be selected at any time when the student assesses his own capabilities and goals in view of the requirements of the program and the type of employment opportunities.

Job Descriptions

Mechanic's Option (Diploma): The refrigeration and air conditioning mechanic's skills are developed toward installation, inspection, maintenance, services and repair of domestic and commercial equipment. He is involved with controls, regulating temperatures, and humidity. He installs ducts and piping systems for distribution of air, water, steam, and refrigerants. He will receive 12 months of training, and upon completion he will receive a (trade) mechanic's diploma.

Technician's Option (Advanced Diploma): Students who want to go further are eligible to undertake six months additional training for expanded opportunities and responsibilities. Upon completing these six additional months they will be able to perform some planning, some design, and some organization of maintenance. Sizing of commercial refrigeration units for cooling or freezing is one of the steps to the design function. The student will be able to make residential air conditioning load calculations for year-round air conditioning installations.

Technology Option (Associate in Applied Arts Degree): This curriculum is a 24-month program, designed to prepare the student to assist in planning, installing, operating, and maintaining air conditioning equipment. The required technical information is presented and related skills are developed which will enable the graduate to function efficiently when working with engineers, systems designers, skilled craftsmen, salesmen, and others in the field. Considerable emphasis is placed on self-development in an effort to encourage the graduate to continue to study and grow as the industry advances.

The Associate Degree graduate may be employed in areas of sales, installation, maintenance, production drafting, systems design, or as a research engineering assistant.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		C	L	CH
AHR 1121	Principles of Refrigeration	5	6	7
MAT 1101	Fundamentals of Mathematics	5	0	5
ENG 1101	Reading Improvement	2	0	2
PHY 1101	Applied Science	3	2	4
DFT 1104	Blueprint Reading: Mechanical	0	3°	1
		15	11	19

Second Quarter

		C	L	CH
AHR 1122	Domestic and Commercial Refrigeration	3	9	6
MAT 1102	Algebra	5	0	5
ENG 1102	Communication Skills	3	0	3
ELC 1102	Applied Electricity	2	3°	3
DFT 1116	Blueprint Reading: Air Conditioning	1	3°	2
		14	15	19

Third Quarter

		C	L	CH
AHR 1123	Principles of Air Conditioning	5	6°	7
AHR 1128	Automatic Controls	3	6	5
PSY 1101	Human Relations	3	0	3
WLD 1101	Basic Gas and Electric Welding	1	3°	2
		12	15	17

Fourth Quarter

		C	L	CH
DFT 1150		2	4	4
AHR 1124	Air Conditioning and Refrigeration Servicing	3	6°	5
AHR 1126	All Year Comfort System	3	6°	5
BUS 1103	Small Business Operations	3	0	3
		11	16	17

FOR THOSE WHO DESIRE ADDITIONAL TRAINING

Graduates of a diploma curriculum in air conditioning and refrigeration with the recommendation of the department head and the faculty advisor will be permitted to undertake an additional two quarters of technical instruction leading to a technician's diploma in Air Conditioning and Refrigeration.

SUGGESTED CURRICULUM BY QUARTERS

TECHNICIAN'S OPTION — 18 MONTHS

Fifth Quarter

			C	L	CH
AHR	209	Commercial Heat Load Calculations and Commercial Systems Design	5	6	7
DFT	232	AHR Drafting	2	4	3
ENG	102	Composition II	3	0	3
MAT	131	Elementary Technical Mathematics I	3	4	5
			13	14	18

Sixth Quarter

			C	L	CH
AHR	228	Air Conditioning Systems & Duct Design	3	6	5
MAT	132	Elementary Technical Mathematics II	3	4	5
ENG	204	Oral Communications	3	0	3
		Social Science Elective	3	0	3
			14	10	18

TECHNOLOGY OPTION — 24 MONTHS

Graduates of the air conditioning and refrigeration Technician's Diploma will be permitted to undertake an additional two quarters of technology courses leading to an associate degree in Air Conditioning and Refrigeration.

Seventh Quarter

			C	L	CH
AHR	201	Winter Air Conditioning	3	4	5
PHY	131	Matter and Energy	3	2	4
PSY	206	Applied Psychology	3	0	3
AHR		Elective	3	0	3
			12	6	15

Eighth Quarter

			C	L	CH
AHR	230	Seminar Research	2	6	5
PHY	132	Electricity and Magnatism	3	2	4
ENG	103	Report Writing	3	0	3
AHR		Elective	3	0	3
			11	8	15

ELECTIVES

Electives for the *Air Conditioning and Refrigeration Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

			C	L	CH
AHR	217	Circuits and Controls II	3	3	4
AHR	210	Installation and Design Problems	2	6	4
AHR	202	Fuels and Burners	2	3	3

SOCIAL SCIENCE

PSY	213	Advanced Psychology	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
ISC	201	Industrial Organization and Management	3	0	3
SSC	203	Environmental Studies	3	0	3

TRANSPORTATION MAINTENANCE

Purpose

There is a growing need for transportation maintenance technicians to rebuild, test and service automotive units including diesel engines. The Service Managers Committee of the American Motors Association estimates that 45 to 50 thousand mechanics and technicians are needed each year to keep service shops properly manned. However, fewer than 10,000 recruits are entering the profession annually.

North Carolina, in its tremendous industrial growth, feels the need for more highly trained and skilled personnel in the automotive and transportation field. Industry is dependent upon transportation for movement of raw materials and finished products. Automotive units and diesel engines are prime movers, and require technicians to service and maintain them for proper operation. This curriculum has been developed to train technicians for the transportation maintenance field.

The Transportation Maintenance Curriculum is designed for students who are interested in work on or related to motor vehicles. This curriculum provides for entrance into technician level employment areas. Principles of design and operation provided for an exact appreciation of the functions of automotive units. Correlated laboratory work develops ability to execute or supervise diagnostic tests and repairs.

Job Description

The transportation maintenance technician has a knowledge of laboratory procedures in automotive and associated areas. He is capable of operating laboratory equipment and instruments to perform a variety of tests on materials and equipment. Included also may be performance testing of new materials and equipment. As a diagnostician, he may, with the use of instruments, locate automotive or electrical defects and arrange for repair. He is often required to record data, write reports and make recommendations.

SUGGESTED CURRICULUM BY QUARTERS

			C	L	CH
First Quarter					
PME	101	Internal Combustion Engine	2	6	4
PME	111	Engine Rebuilding	2	6	4
DFT	1104	Blueprint Reading: Mechanical	0	3	1
MEC	1113	Shop Processes	2	3	3
ENG	1101	Reading Improvement	2	0	2
OR		OR			
ENG	101	Composition I	3	0	3
MAT	1101	Fundamentals of Mathematics	5	0	5

Second Quarter

			C	L	CH
PME	102	Automotive Ignition Systems	3	6	5
PME	112	Automotive Fuel Systems	3	6	5
WLD	1101	Basic Gas and Electric Welding	1	3	2
PHY	1101	Applied Science	3	2	4
ENG	1102	Communication Skills	3	0	3
OR		OR			
ENG	102	Composition II	3	0	3

Third Quarter

			C	L	CH
PME	123	Automotive Chassis & Supension Systems	3	3	4
PME	121	Braking Systems	2	3	3
PME	103	Automotive Electrical Systems	3	3	4
AHR	1101	Automotive Air Conditioning	2	3	3
PHY	1102	Applied Science	3	2	4
PSY	1101	Human Relations	3	0	3
OR		OR			
PSY	206	Applied Psychology	3	0	3

Fourth Quarter

			C	L	CH
PME	124	Automotive Power Train Systems	3	9	6
*PME	1125	Automotive Servicing	3	9	6
*BUS	1103	Small Business Operations	3	0	3
**MEC	1114	Shop Processes	2	3	3
**CHM	111	General Chemistry I	4	3	5
**ENG	103	Report Writing	3	0	3
OR		OR			
*ENG	1103	Report Writing	3	0	3
		Elective			

*For students wishing to terminate their program with one year diploma.
**For students wishing to continue their program for associate degree.

Fifth Quarter

			C	L	CH
PME	250	Advanced Auto Fuel Systems	5	6	7
MEC	1115	Treatment of Ferrous Metals	2	3	3
MAT	131	Elementary Tech. Math I	3	4	5
		Elective			

Sixth Quarter

			C	L	CH
PME	224	Advanced Automatic Transmissions I	3	6	5
PME	202	Advanced Ignition System	1	3	2
PME	223	Front Suspension, Alignment and Power Steering	1	6	3
		Elective			

Seventh Quarter

			C	L	CH
PME	240	Diagnosing and Testing I	5	6	7
AHR	1111	Advanced Air Conditioning	2	4	3
PHY	131	Physics: Matter and Energy	3	2	4
		Elective			

Eighth Quarter

			C	L	CH
PME	241	Diagnosing and Testing II	5	6	7
PME	201	Motor Vehicle Laws and Regulations	3	0	3
PME	202	Emission Control Systems	5	6	7
PHY	132	Electricity and Magnetism	3	2	4

ELECTIVES

PME	204	WV Engines	0	6	2
PME	205	Disc Brakes	0	6	2
PME	206	Alternator and Starter Rebuilding	1	3	2
PME	207	Engine Modifications and Advanced Engine Designs	0	6	2
PME	210	Electrical Accessories, Instruments	0	6	2
PME	208	Wankel Engine	2	6	4
PME	250	Cooperative Mechanics Training	0	0	3
PME	209	Foreign Car Engines	0	6	2
PME	215	The Diesel Engine	2	6	4

MACHINIST TRADE

Purpose

This curriculum was prepared to meet a definite need for training of machinists. Surveys recently completed in North Carolina show that many of the existing industries lack time and facilities for training enough machinists to meet present and planned needs. Expanding industries already located in our State and new industries under development invariably express the need for skilled craftsmen who have the background knowledge and potential to advance.

This guide is designed to give learners the opportunity to acquire basic skills and the related technical information necessary to gain employment and build a profitable career in the machine shop industry in the State. It is comprised of the joint views of committees responsible for its development.

Job Description

The machinist is a skilled metal worker who shapes metal parts by using machine tools and hand tools. His training and experience enable him to plan and carry through all the operations needed in turning out a machined product and to switch readily from one kind of product to another. A machinist is able to select the proper tools and material required for each job and to plan the cutting and finishing operations in their proper order so that he can complete the finished work according to blueprint or written specifications. He makes standard shop computations relating to dimensions of work, tooling, feeds, and speeds of machining. He often uses precision measuring instruments such as micrometers and gages to measure the accuracy of his work to thousandths of an inch.

This skilled worker must be able to set up and operate most types of machine tools. The machinist also must know the composition of metals so that he can heat and quench cutting tools and parts to improve machinability. His wide knowledge enables him to turn a block of metal into an intricate, precise part.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		C	L	CH
MEC 1101	Machine Shop Theory and Practice	3	10°	6
MAT 1101	Fundamentals of Mathematics	5	0	5
DFT 1104	Blueprint Reading: Mechanical	0	3°	1
ENG 1101	Reading Improvement	2	0	2
PHY 1101	Applied Science	3	2	4
		13	15	18

Second Quarter

		C	L	CH
MEC 1102	Machine Shop Theory and Practice	3	10°	6
MAT 1103	Geometry	3	0	3
DFT 1105	Blueprint Reading: Mechanical	0	3°	1
PHY 1102	Applied Science	3	2	4
ENG 1102	Communication Skills	3	0	3
		12	15	17

Third Quarter

		C	L	CH
MEC 1103	Machine Shop Theory and Practice	3	10°	6
MEC 1115	Treatment of Ferrous Metals	2	3°	3
DFT 1106	Blueprint Reading: Mechanical	0	3°	1
MAT 1104	Trigonometry	3	0	3
PSY 1101	Human Relations	3	0	3
		11	16	16

Fourth Quarter

		C	L	CH
MEC 1104	Machine Shop Theory and Practice	3	10°	6
MEC 1116	Treatment of Non-Ferrous Metals	2	3°	3
WLD 1101	Basic Gas and Electric Welding	1	3°	2
MAT 1123	Machinist Mathematics	3	0	3
BUS 1105	Industrial Organizations	3	0	3
		12	16	17

ADVANCED MACHINIST

Purpose

The Advanced Machinist Curriculum is a continuation of the basic Machinist Trades Program. It is designed to help the student acquire more refined skills and more understanding in those areas of metal working needed by industry and smaller shops located in this region. Because of this greater proficiency and broader knowledge, the graduate of this advanced program should be able to take advantage of more employment opportunities and would have a greater potential for job satisfaction.

Applicant should have completed a one year (12 month) machinist program or should be able to demonstrate that they have acquired equivalent proficiency.

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PREREQUISITE: A student must have completed at least four quarters of the machinist trade program as a prerequisite for admission of a candidate to the Advanced Machinist diploma program.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

		C	L	CH
MEC 1126	Heat Treating Practice	1	3°	2
DFT 1220	Shop Sketching	0	3°	1
MEC 1501	Precision Machining	0	9°	3
MEC 1515	Manufacturing Processing	4	0	4
MEC 1540	Machine Repair	2	6°	4
		7	21	14

Second Quarter

		C	L	CH
MEC 1502	Jig, Fixture and Die Making	2	9°	5
DFT 1221	Machinist Drafting I	0	4	2
MEC 1505	Mechanisms	2	3°	3
MEC 1516	Strength of Materials	2	2	3
MEC 1541	Machine Repair II	0	3°	1
		6	21	14

Third Quarter

		C	L	CH
MEC 1504	Model Making	2	8°	5
DFT 1222	Machinist Drafting II	0	4	2
MEC 1054	Gage and Template	1	5°	3
ENG 1115	Technical Communications	3	0	3
MEC 1508	Cutter Grinding	1	2°	2
MEC 1542	Machine Repair III	0	3°	1
		7	22	16

Fourth Quarter

		C	L	CH
MEC 1560	Automatic and Semi-automatic Machinery	3	3°	4
MEC 1700	Design and Manufacturing	4	12*	10
MEC 1543	Machine Repair IV	0	3*	1
		7	18	15

MECHANICAL DRAFTING

Purpose

This curriculum is designed to prepare students to enter the field of mechanical drafting. The first two quarters contain courses basic to all fields of drafting. The third and fourth quarters contain specialization and related courses that prepare one to enter mechanical drafting occupations.

Each course is prepared to enable an individual to advance rapidly in drafting proficiency upon entering the field of work. Courses are arranged in sequence to develop drafting skills and proficiency in mathematics and science. The draftsman associates with many levels of personnel — administrative, architects, engineers, skilled workmen — and must be able to communicate effectively with them. Courses to develop knowledge and skills in communication, human relations, economics and industrial organization are provided to assist the student in developing understanding and confidence in his relations with other persons.

Job Description

Draftsman prepares clear, complete, and accurate working plans and detailed drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions: makes final sketch of the proposed drawing, checking dimension or parts, materials to be used, the relation of one part to another, and the relation of the various parts to the whole structure. Makes any adjustments or changes necessary or desired. Inks in lines and letters on pencil drawings as required. Exercises manual skill in the manipulation of triangle, T-square, and other drafting tools. Lays tracing paper on drawing and traces drawing in pencil or ink. Makes charts for representation of statistical data. Makes finished designs from sketches. Utilizes knowledge of various machines, engineering practices, mathematics, building materials, and other physical sciences to complete the drawings.

Mechanical draftsman performs the general duties of a draftsman and also specializes in making rough drafting sketches of proposed mechanical devices, and then drawing necessary details. Prepares accurate scale drawings of parts or machines from specifications.

Courses leading to a diploma in Mechanical Drafting are normally offered only in the evening at TIA. A student may complete his requirements by attending three or four nights a week for eleven quarters. He must be able to take the courses when offered by the Institute in order to finish in this minimum time. The offering of any of these courses is contingent upon sufficient enrollment.

SUGGESTED CURRICULUM BY QUARTER FOR EVENING CLASSES

First Quarter

		C	*L*	*CH*
DFT 1120	Drafting I	2	4	4
MAT 1103	Geometry	3	0	3
		5	4	7

Second Quarter

		C	*L*	*CH*
DFT 1121	Drafting II	2	4	4
MAT 1102	Algebra	5	0	5
		7	4	9

Third Quarter

		C	*L*	*CH*
DFT 1122	Drafting III	2	4	4
ENG 1101	Reading Improvement	2	0	2
		4	4	6

Fourth Quarter

		C	*L*	*CH*
DFT 1123	Drafting IV	2	4	4
PHY 1101	Applied Science	3	2	4
		5	6	8

Fifth Quarter

		C	*L*	*CH*
DFT 1125	Descriptive Geometry	2	4	4
MAT 1104	Trigonometry	3	0	3
		5	4	7

Sixth Quarter

		C	*L*	*CH*
DFT 1130	Drafting V	2	4	4
PHY 1102	Applied Science	3	2	4
		5	6	8

Seventh Quarter

		C	*L*	*CH*
DFT 1131	Drafting VI	2	4	4
ENG 1102	Communication Skills	3	0	3
		5	4	7

Eighth Quarter

		C	L	CH
DFT 1132	Drafting VII	2	4	4
PSY 1101	Human Relations	3	0	3
		5	4	7

Ninth Quarter

		C	L	CH
DFT 1133	Drafting VIII	2	4	4
MEC 1113	Shop Processes	2	3	3
		4	7	7

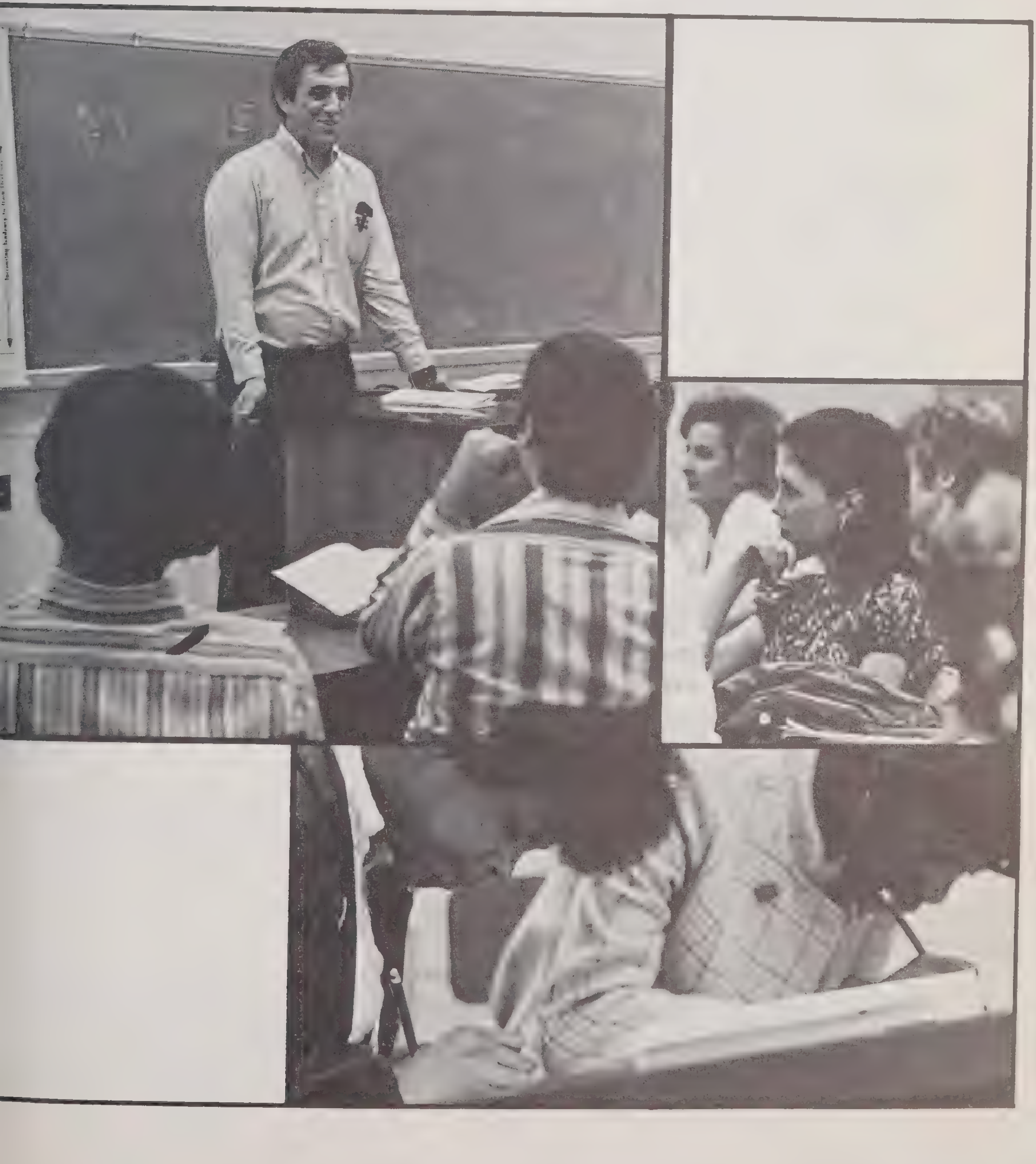
Tenth Quarter

		C	L	CH
MEC 1115	Ferrous Metals	2	3	3
MEC 1114	Shop Processes	2	3	3
		4	6	6

Eleventh Quarter

		C	L	CH
MEC 1116	Non-Ferrous Metals	2	3	3
BUS 1105	Ind. Organization	3	0	3
		5	3	6

COURSE DESCRIPTIONS



AIR CONDITIONING AND REFRIGERATION

AHR 201 Winter Air Conditioning 3 2 4

Warm air systems, heat emitters, electric heating, forced hot water and steam heating systems including selection and sizing of equipment — registers, grills, furnaces, boilers, radiators, baseboards, piping, and ducts. Fuels and burners used in supplying heat for various types of heating systems — coal, oil, natural gas, manufactured gas, liquified petroleum gas, and electricity. Experiments in equipment selection, installation adjusting, and servicing will be conducted. Heating layout and specifications for an exisiting structure or one in blueprint stage will be prepared.
Prerequisite: DFT 232.

AHR 202 Fuels and Burners 2 3° 3

Advanced course in heating systems with emphasis on new types of fuels and burners. Demonstrations and experiments with mock-ups and sample systems of gas, fuel oil and electrical installations. Experiments in equipment selection, installation and maintenance will be conducted.
Prerequisite: AHR 201.

AHR 209 Air-Conditioning System Design 5 6° 7

Practical procedures and data for calculating heat loss and heat gain in residential structures. Much of the data is secured from the ASHRAE guide and data book.
Prerequisites: AHR 1124, AHR 1126.

AHR 210 Installation and Design Problems 2 6° 4

This course will consist of making drawings and designs that emphasize commercial refrigeration and air-conditioning layouts. Information is gathered, calculations are made, schematic drawings are prepared, and specifications written for the specified installations.
Prerequisites: DFT 232, AHR 201.

AHR 217 Circuits and Controls II 3 3° 4

Practice in layouts, selection, installation and trouble-shooting of conventional refrigeration and air conditioning control systems. Class and laboratory work includes control of residential and commercial heating and air conditioning systems. Control problems of mechanical refrigeration, zone and central-fan systems. Unit heaters and ventilators, peripheral air conditioning units and radiant-panel heating are studied.
Prerequisites: AHR 1102, AHR 1128.

AHR 228 Air Conditioning Systems & Duct Design 5 6 7

Designed to aid the student in learning to create comfort systems for residence and industrial buildings. The student learns to calculate and specify the required equipment capacity based upon the ASHRAE standards. Practical problems will be used to demonstrate theoretical applications.
Prerequisite: DFT 232.

AHR 230 Seminar and Research 2 6 5

Successful completion of the Air-Conditioning and Refrigeration Technology curriculum is climaxed by the student conducting a research project and writing a report on this project. The student, through consultation with the instructors, will choose an individual project that will, when feasible, involve an actual installation. Frequent conferences with instructor will guide the student in the progress of research and in the preparation of the report.
Prerequisite: AHR 206.

AHR 1101 Automotive Air Conditioning

General introduction to the principles of refrigeration; student of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system.
Prerequisite: PHY 1102.

AHR 1111 Advanced Air Conditioning 2 4 3

A continuation of AHR 1101.

AHR 1121 Principles of Refrigeration 5 6 7

An introduction to the principles of refrigeration, terminology, the use and care of tools and equipment, and the identification and the function of the component parts of a system. Other topics to be included will be the basic laws of refrigeration; characteristics and comparison of the various refrigerants; the use and construction of valves, fittings, and basic controls. Practical work includes tube bending, flaring and soldering. Standard procedures and safety measures are stressed in the use of special refrigeration service equipment and the handling of refrigerants.
Prerequisite: None.

AHR 1122 Domestic and Commercial Refrigeration 3 9 6

Domestic refrigeration servicing of conventional, hermetic, and absorption systems. Cabinet care, controls, and system maintenance in domestic refrigerators, freezers, and window air conditioning units is stressed. Commercial refrigeration servicing of display cabinets, walk-in-cooler and freezer units, and mobile refrigeration systems is studied. The use of manufacturers catalogs in sizing and matching system components and a study of controls, refrigerants, servicing methods is made. The American Standard Safety Code for Refrigeration is studied and its principles practiced.
Prerequisite: AHR 1121.

AHR 1123 Principles of Air Conditioning 5 6 7

Work includes the selection of various heating, cooling and ventilating systems, investigation and control of factors affecting air cleaning, movement, temperature, and humidity. Use is made of psychrometric charts in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Practical sizing and balancing of ductwork is performed as needed.
Prerequisite: AHR 1122.

AHR 1124 Air Conditioning and Refrigeration Servicing 3 6 5

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification and temperature control of air in an air conditioning space. Installation of various ducts and lines needed to connect various components is made. Shop work involves burner operation, controls, testing and adjusting of air conditioning and refrigeration equipment, and location and correction of equipment failure.
Prerequisite: AHR 1123.

AHR 1126 All Year Comfort Systems 3 6 5

Auxiliary equipment used in conjunction with refrigeration systems to provide both heating and cooling for "all year" comfort will be studied and set up in the laboratory. Included will be oil fired systems, gas fired systems, water circulating systems, and electric-resistance systems. Installation of heat pumps will be studied along with servicing techniques. Reversing valves, special types of thermostatic expansion valves, systems of de-icing soils, and electric wiring and controls are included in the study.
Prerequisites: AHR 1123, AHR 1128.

AHR 1128 Automatic Controls 3 6 5

Types of automatic controls and their function in air conditioning systems. Included in the course will be electric and pneumatic controls for domestic and commercial cooling and heating; zone controls, unit heater and ventilator controls, commercial fan systems controls, commercial refrigeration controls, and radiant panel controls.
Prerequisites: ELC 1102, AHR 1122.

ART (ART)

ART 106 History of Art 3 0 3

A study of the origins and development of art forms, starting with prehistoric man and succeeding civilizations, Egyptian, ancient Near East, Aegean, Greek, Etruscan, through Roman.

Slides, films, and available audi-visuals will be used to make comparative studies with contemporary forms.
Prerequisite: None.

ART 107 History of Art 3 0 3

A continuation of ART 106 proceeding from Roman to early Christian, Byzantine, Islamic, early Medieval Romanesque, Gothic and art through the seventeenth century exploring contributions of each age and civilization to contemporary design.

ART 231 Painting with Polymers 2 6 4

An introduction to the medium: a study of the techniques used in painting and illustration with the relatively new acrylic polymer emulsions. Students may select projects or complete assigned projects.
Prerequisite: None.

ART 238 Selective Media I 2 3 3

Designed to give students an opportunity to work in a variety of media not otherwise studied.

The media selected to meet the needs and interests of the class will include: sculpture, ceramics, mono-prints, silk-screen printing, lithography, metal enameling, and painting with oils, polymers, and acrylics.
Prerequisite: None.

ART 239 Selective Media II Continuation of ART 238. 2 3 3

ART 240 Metal Sculpturing 1 3 2

An introduction to metal as a media of expression in time and space. The basic use of welding, brazing, and soldering will be taught.
Prerequisite: DES 210.

AUDIOVISUAL TECHNOLOGY (AVT)

C L CH

AVT 101 Transparency Production 2 2 2

This course provides the skills and techniques necessary to produce transparencies for use with overhead projectors. Among those production methods covered are the thermal, diazo, pressure sensitive, photo copy and photographic processes.
Prerequisite: None.

AVT 102 Slide Production 2 2 3

Designed to equip the student with the skills and techniques to prepare, take and reproduce slides. These slides, usually 2 x 2, may convy information, teach a skill or affect an attitude through group viewing or individual study.
Prerequisite: None.

AVT 103 Filmstrip Production 2 2 3

This course will provide the student with the skills to prepare, take, and reproduce filmstrips using 35 mm film.
Prerequisite: None.

AVT 110 Office Machines & Filing 3 2 4

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the thermofax, photo copies, ditto, and stencil machines.

The fundamentals governing filing will also be covered. What records to keep, how to store them, how to find them quickly, and how to apply the criteria for determining their disposition or retention. Included are rules for alphabetic indexing.
Prerequisite: None.

C L CH

AVT 112 Teaching Methods 3 0 3

Emphasis on the principles and practices of coordinating audio-visual materials with instructional objectives.

Consideration is given to learning processes to planning instructional approaches, and to locating and matching media to objectives.
Prerequisite: None.

AVT 120 Basic Electricity 2 2 3

A study of the structure of matter and the electron theory, the relationship between voltage, current and resistance in seris, parallel and series-parallel circuits. Analysis of direct current circuits by Ohm's law and Kirchhoff's law; sources of direct current potentials. Fundamental concepts of alternating current flow and circuit analysis.
Prerequisite: None.

AVT 210 Equipment Repair 2 2 3

A study in understanding the mechanical and electrical operation of projection equipment, tape recorders, record players, and other magnetic storage devices, covering repair, problem locating and trouble shooting.
Prerequisite: Basic Electricity.

AVT 212 Audiovisual Department Procedures 3 0 3

A study in the techniques of procedural operation of an instructional materials center, a study of the methods of keeping records and data procedures, basic in-service training techniques, physical arrangements, traffic patterns, and sources of equipment and materials.
Prerequisite: None.

AVT 220 Information Resources 3 0 3

Operations of literary mechanics: indexes, catalogues, bibliographies, audiovisual software and equipment sources, from which one can secure illustrations, facts to prepare audiovisuals. Emphasis will be placed on how the technician can "unlock" the door to a vast amount of source material with the least bit of effort.
Prerequisite: None.

AVT 230 T. V. Production 2 2 3

A course designed to equip the student with the skills to produce T.V. tapes to play back to a group or individuals in a learning situation. Areas covered will be how to set the equipment up, cameras, monitors and recorders, tape planned sessions, and play them back.
Prerequisite: None.

AVT 235 Movie Making 2 2 3

The students will learn how to produce 8 mm. movies. Areas covered will be camera operations, filming techniques, script writing, editing and film selection.
Prerequisite: None.

AVT 240 Display Design 2 2 3

To develop techniques and design concepts in the design of bulletin boards, classroom displays, working models and other areas not covered by projected media.
Prerequisite: None.

AVT 245 Work Experience (Practicum) 3 6 5

To give the student an opportunity to be exposed to an environment to put to practice skills and techniques in the development of audio-visual instructional design programs. This course will be at the conclusion of study in the AV curriculum.

BUSINESS ADMINISTRATION (BUS)

BUS 101 Introduction of Business 5 0 5

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management.
Prerequisite: None.

BUS 102 Typewriting I 2 3° 3

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts.
Prerequisite: None.

BUS 103 Typewriting II 2 3° 3

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms.
Prerequisite: BUS 102 or the equivalent.

BUS 104 Typewriting III 2 3° 3

Emphasis on production typing problems and speed building. Attention to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms.
Prerequisite: BUS 103 or the equivalent.

BUS 105S Typing Office Production 2 3° 3

A course to train the student who possesses basic skills to produce with efficiency typewritten work that would be acceptable in the most exacting business offices. The student learns to think independently regarding style and method.
Prerequisite: BUS 205.

BUS 106 Shorthand I 3 2 4

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms, and phrases.
Prerequisite: None.

BUS 107 Shorthand II 3 2 4

Continued study of theory with greater emphasis on dictation and elementary transcription.
Prerequisite: BUS 106 or the equivalent.

BUS 108 Shorthand III 3 2 4

Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription.
Prerequisite: BUS 107.

BUS 110 Office Machine 2 2 3

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator.
Prerequisite: None.

BUS 111 Secretarial Office Machines 2 2 3

Techniques in operating three basic office machines: ten-key, full-key, and rotary calculator. Problem solving activities that will require students to use correct machine operation to promote skill development in data processed in the business office.
Prerequisite: None.

BUS 112 Records Management I 3 0 3

Fundamentals governing what records to keep, how to store them, how to find them quickly, and how to apply the criteria for determining their disposition or retention. Included are rules for alphabetic indexing.
Prerequisite: None.

BUS 113 Records Management II 3 0 3

Review of the fundamentals of indexing and filing, combining theory and practice by use of cards, miniature letters, filing boxes and guides. Comprehensive study of alphabetic, geographic, subject, and numeric filing.
Prerequisite: BUS 112.

BUS 115 Business Law 3 0 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.
Prerequisite: None.

BUS 116 Business Law 3 0 3

Includes the study of laws pertaining to bailments, sales, risk-bearing, partnership-corporation, mortgages, and property rights.
Prerequisite: BUS 115.

BUS 120 Accounting I 5 2 6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned.
Prerequisite: MAT 110 or MAT 101.

BUS 121 Accounting II 5 2 6

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data or management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.
Prerequisite: BUS 120.

BUS 122 Accounting 5 0 5

Control accounting and additional statements and analyses are covered in this course. Topics include departmental accounting, branch accounting, job order cost system, funds statement and cash flow.
Prerequisite: BUS 121.

BUS 123 Business Finance I 3 0 3

Financing of business units, as individuals, partnerships, corporations, and trusts. A detailed study is made of short-term, long-term, and consumer financing.
Prerequisite: ECO 104.

BUS 124 Business Finance II 3 0 3

Financing federal, state, and local government and the ensuing effects upon the economy. Factors affecting supply of funds, monetary and credit policies.
Prerequisite: BUS 123.

BUS 130 Secretarial Accounting 5 2 6

Basic principles, procedures, and terminology of accounting, as related to secretarial duties in the business office. Includes making entries, preparing financial statements and analyzing and interpreting financial data.
Prerequisite: MAT 110.

BUS 134 Personality Development 3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of persoality. Emphasis is placed on grooming and methods of personality improvement.

BUS 140 Industrial Accounting 3 2 4

Basic principles of accounting for assets, liabilities, and net worth. Familiarization with the use of accounting data in the industrial setting and with cost accounting theory and practices.
Prerequisite: None.

BUS 183M Terminology and Vocabulary 3 0 3

To develop an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in the medical profession.
Prerequisite: None.

BUS 205 Advanced Typewriting 2 3* 3

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal documents.
Prerequisite: BUS 104.

BUS 206M Dictation and Transcription 3 2 4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: BUS 108.

BUS 206T Dictation and Transcription 3 2 4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: BUS 108.

BUS 207M Dictation and Transcription 3 2 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: BUS 206M.

BUS 207T Dictation and Transcription 3 2 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: BUS 206T.

BUS 208M Dictation and Transcription 3 2 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy.
Prerequisite: BUS 207M.

BUS 208T Dictation and Transcription 3 2 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy.
Prerequisite: BUS 207T.

BUS 211 Office Machines 2 2 3

Instructions in the operation of the bookkeeping-accounting machines, duplication equipment, and the dictating and transcribing machines.
Prerequisite: BUS 110 or BUS 111.

BUS 212 Machine Transcription 2 2 3

Students develop skill in typing mailable letters, memoranda, and manuscripts directly from recorded belts. Emphasis is placed on vocabulary development, spelling, and word division.
Prerequisite: BUS 102.

BUS 213 Advanced Machine Transcription 2 2 3

Students do more intensive work in transcribing directly from recorded belts. Additional exercises are given to increase vocabulary and improve spelling.
Prerequisite: BUS 212.

BUS 214 Secretarial Procedures I 3 2 4

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: The role of the professional secretary, receptionist duties, purchasing equipment and supplies, processing mail, telephone techniques.
Prerequisites: None.

BUS 215M Office Application 6 0 6

During the sixth quarter only, students are assigned to work in a medical office for six hours per week. The objective is to provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisites: BUS 214, BUS 205, BUS 208M, BUS 211.

BUS 215T Office Application 6 0 6

During the sixth quarter only, students are assigned to work in a business, technical, or professional office for six hours per week. The objective is to provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisites: BUS 214, BUS 205, BUS 208T, BUS 211.

BUS 216 Reception Techniques 3 0 3

A comprehensive picture of the modern office receptionist's role for business, government, or the profession to focus the student's attention on this vital role and make her aware of the opportunities available through this position. The sudent is oriented to the office and company and specifics she will face. These include receiving, announcing, and introducing visitors to company personnel, dealing with problem callers, use of telephone equipment, etc.

BUS 217 Business Law 3 0 3

A study of the powers, policies, methods, and procedures used by the various federal, state and local administrative agencies in promoting and regulating business enterprises. It includes a consideration of the constitutional and statutory limitations on these bodies and judicial review of administrative action.
Prerequisite: BUS 116.

BUS 222 Intermediate Accounting I 5 2 6

Thorough treatment of the field of general accounting. The course includes, among other aspects, the balance sheet, income and retained earnings statements, fundamental processes of recording cash and temporary investments, and analysis of working capital.
Prerequisite: Bus 121.

BUS 223 Intermediate Accounting II 5 2 6

Additional study of intermediate accounting with emphasis on investments, plants and *equipment, intangible assets and deferred changes, long-term liabilities, paid-in capital,* retained earnings, and special analytical processes.
Prerequisite: Bus 222.

BUS 225 Cost Accounting 3 2 4

Nature and purposes of cost accounting; accounting for direct labor, materials, and factory burden; job cost, and standard cost principles and procedures; selling and distribution cost; budgets, and executive use of cost figures.
Prerequisite: BUS 121.

BUS 226S Payroll Records and Accounting 3 0 3

A study in the preparation of the payroll which includes: (1) Figuring basic wages, (2) Deducting for taxes (FICA, FUTA, and Federal Income Taxes), and (3) Making necessary journal entries, as well as other problems encountered in preparing the payroll.
Prerequisites: BUS 120 or BUS 130

BUS 229 Taxes 3 2 4

Application of federal and state taxes to various businesses and business conditions. A study of the following taxes: income, payroll, intangible, capital gain, sales and use, excise, and inheritance.
Prerequisite: BUS 121.

BUS 232 Sales Development 3 0 3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.
Prerequisite: None.

BUS 233 Personnel Management 3 0 3

Principles of organization and management of personnel, procurement, placement, training, performance checking, supervision, remuneration, labor relations, fringe benefits and security.
Prerequisite: None.

BUS 235 Business Management 3 0 3

Principles of business management including overview of major functions of management, such as planning, staffing, controlling, directing, and financing. Clarification of the decision-making function versus the operating function. Role of management in business —qualifications and requirement.
Prerequisite: None.

BUS 237 Wholesaling 3 0 3

The development of wholesaling; present day trends in the United States. A study of the functions of wholesaling.
Prerequisite: None.

BUS 239 Marketing 5 0 5

A general survey of the field of marketing, with a detailed study of the functions, policies, and institutions involved in the marketing process.
Prerequisite: None.

BUS 242 Sales Promotion 3 0 3

The scope and activities of sales promotion with emphasis on the coordination of advertising, display, special events and publicity. External and internal methods of promoting business; budgeting, planning, and implementing the plan.
Prerequisite: None.

BUS 243 Advertising 3 0 3

The role of advertising in a free economy and its place in the media of mass communications. A study of advertising appeals; product and market research; selection of media; means of testing effectiveness of advertising. Theory and practice of writing advertising copy for various media.
Prerequisite: None.

BUS 245 Retailing 3 0 3

A study of the role of retailing in the economy including development of present retail structure, functions performed, principles governing effective operation and managerial problems resulting from current economics and social trends.
Prerequisite: None.

BUS 247 Business Insurance 3 0 3

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included.
Prerequisite: None

BUS 249 Administration and Supervision in a Pre-School Facility 5 0 5

Designed to assist students in establishing policies and procedures for the operation of a center for the group care of young children. Attention is given to the standards and procedures for licensing and certification. Principles of supervision and techniques for promoting acceptance of a philosophy by the total staff.

BUS 250 Real Estate 3 0 3

A study of the theories and practices in the real estate market. The study includes the legal framework, the economic significance, and the social implications that make up the real estate market.

BUS 267 Auditing 3 2 4

Principles of conducting audits and investigations, setting up accounts based upon audits; collecting data on working papers, arranging and systemizing the audit, and writing the audit. Emphasis is placed on detailed audits, internal auditing, and internal control.
Prerequisite: Bus 223.

BUS 271 Office Management 3 0 3

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and actuating office problems.
Prerequisite: None.

BUS 272 Principles of Supervision 3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors, subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed.
Prerequisite: None.

BUS 274 Secretarial Procedures II 3 2 4

This course is designed to give the advanced student the realistic attainable goals of professional secretarial status. The objective is to train the student to be knowledgeable about functions and procedures. Simultaneously, the student should demonstrate a high level of competency in secretarial duties and be able to serve as executive assistant to top management.

Time will also be spent visiting local businesses and industry.

Among the topics covered include the following: Assistance with travel and conferences, collecting, processing and presenting business data, financial and legal facets of secretarial work, professional future — fulfilling the administrative role, insurance claims, payroll and tax duties.
Prerequisite: BUS 214.

BUS 284M Terminology and Vocabulary 3 0 3

Greater emphasis on an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in medical offices.
Prerequisite: BUS 183M.

BUS 300S Current Trends in Business 2 3 3

Designed to aid the student to become more aware of current trends in the business world through reading, reporting, informal discussions, and field trips.
Prerequisite: Advance standing in Business Administration.

BUS 1102 Typewriting 2 3° '3

A beginning course in touch typewriting, with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, and tabulation.
Prerequisite: None.

BUS 1103 Small Business Operations 3 0 3

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations.
Prerequisite: None.

BUS 1105 Industrial Organizations 3 0 3

Methods, techniques, and practices of modern management in planning, organizing and controlling operations of a manufacturing concern. Introduction of the competitive system and the factors constituting product cost.
Prerequisite: None.

CHEMISTRY (CHM)

CHM 111 General Chemistry I 4 3° 5

An introductory chemistry course involving chemical terminology, fundamental principles, atomic structure, periodic classification of the elements, formulas and equations, the properties of the gaseous, liquid and solid states of matter, properties of mixtures and the various types of compounds, valence and oxidation number, chemical bonds, classification and naming compounds, types of chemical reactions, and solutions are studied as are stoichiometry and energy relationships in chemical changes. Laboratory work emphasizes experiments which yield data that, when analyzed and interpreted, reveal important relationships to lecture topics. When practical the student is told to draw tentative conclusions by assuming that his data is typical of that which would be obtained from a large number of observations.
Prerequisite: None.

CHM 112 General Chemistry 6 4° 8

A continuation of CHM 111. A study of greater depth is made of the properties of the gaseous, liquid and solid state, of concentrations of solutions, of gas law problems and stoichiometry and energy relationships. A detailed study is made of the halogens, reaction rates and chemical equilibrium, ionization and ionic equilibria and oxidation and reduction reactions. Laboratory work consists of various inorganic reactions and preparations, and investigations of properties of solutions.
Prerequisite: CHM 111.

CHM 121 Quantitative Chemical Analysis I 3 6° 5

Emphasis is placed on developing laboratory techniques employed in the volumetric analysis of acids and bases. The students will become thoroughly familiar with the principles and procedures of neutralization titration. Classroom work will emphasize the stoichiometric calculations involved in interpreting the results of analysis. Laboratory work will consist of percentage analysis of selected substances.
Prerequisite: CHM 113.

CHM 222 Quantitative Chemical Analysis II 2 9° 5

The more complex types of quantitative analysis. Special emphasis on the theory of oxidation-reduction and gravimetric analysis. Instrumental analysis is introduced and use of modern analytical devices is stressed. The student will become familiar with the principles of redox reactions, ionization constants and pH of solutions. Stress is placed on the stoichiometric calculations of quantitative chemical analysis. Classroom work complements quantitative.
determinations in the laboratory.
Prerequisite: CHM 121.

CHM 227 Physical Chemistry 3 2 4

Atomic theory, states of matter, chemical thermodynamics, molecular properties of solutions, equilibria, phase role, electrochemistry, kinetics, surface chemistry, and photochemistry constitute major areas of study.
Prerequisite: CHM 121.

CHM 231 Organic Chemistry I 3 6° 5

Nomenclature, structure, preparation, properties, and reactions of aliphatic organic compounds. Laboratory work emphasizes techniques.
Prerequisite: CHM 113S.

CHM 232 Organic Chemistry II 3 6° 5

The nomenclature, structure, preparation, properties, and reactions of aromatic organic compounds. Laboratory work emphasizes techniques and involves preparation and analysis of selected organic compounds.
Prerequisite: CHM 231.

CHM 233 Organic Chemistry III 3 6° 6

A continuation of CHM 232. Polymers and other macro molecules will be studied in details with some emphasis on synthetic textile fibers. Laboratory work will be centered around Polymers.
Prerequisite: CHM 232.

CHM 241 Industrial Chemical Analysis I 2 6° 6

An industrial laboratory situation is simulated. Principles and techniques learned in previous quarters are utilized in solution of problems common to local industry. It will be the responsibility of the instructor to determine and submit in outline form a program of suitable scope and sequence of topics which he will work out from consultation with his local advisory committee, representing the industry. This program must be approved by the administration and accepted by the appropriate State-level authority.
Prerequisite: CHM 222.

CHM 242 Industrial Chemical Analysis II 3 12° 7

An industrial laboratory situation is maintained and the emphasis on instrumentation is expanded. Problems on industrial quality control. Plan visitations.
Prerequisite: CHM 241.

CHM 250 Qualitative Inorganic Analysis 4 4 6

Lectures involve the practice and theory which underlie the ways and means by which substances can be identified. Specifically the concern is finding out which cations (metallic ions and ammonium ion) and anions (acid radicals) are present in substances and mixtures of substances. Laboratory practice involves the separation and identification of a few common and representative cations and anions in a variety of unknowns.
Prerequisite: CHM 112.

CHM 252 The Chemistry of Living Systems 3 2° 4

This course is an elective for Chemical Technology students. It relates basic chemistry to living systems. In the laboratory the student acquires basic techniques for laboratory study of the structures and functions of organisms. Application is also made to laboratory techniques used in related fields.
Prerequisites: CHM 205S, 121.

DENTAL (DEN)

DEN 1001 Introduction to Dental Assisting 2 0 2

An introduction to the history of dental assisting, the modern role of the dental assistant in practice and in relation to other members of the dental health team, and the personal and ethical requirements for safe and effective practice.
Prerequisite: None.

DEN 1002 Dental Materials 2 9 5

Identification of dental materials, characteristics of each, evaluation of quality, and principles and procedures related to manipulation and storage of various dental materials.
Prerequisite: None.

DEN 1003 Preclinical Sciences I 3 3 4

Basic information from nutrition, anatomy and physiology, and oral and dental anatomy as related to dental science and the practice of dental assisting. Designed as three units which may be scheduled for either concurrent or sequential teaching.
Prerequisite: None.

DEN 1004 Preclinical Sciences II 4 0 4

Fundamental information from oral pathology, pharmacology, bacteriology, and common emergencies as related to the role of the dental assistant. Designed in four units to permit flexibility in scheduling.
Prerequisite: DEN 1003.

DEN 1005 Dental Office Management I 3 2 4

Fundamentals of accounting as applied to dental office procedures. Practice in application of principles to various forms commonly used in the dental office.
Prerequisite: None.

DEN 1006 Clinical Procedures I 3 6 5

Principles and procedures related to radiology, dental instruments and equipment, and chairside techniques of dental assisting. Designed in three units for flexibility in scheduling.
Prerequisite: DEN 1002.

DEN 1007 Clinical Procedures II 4 6 6

Role of the dental assistant in various dental specialties, such as endodontics, periodontics, orthodontics, prosthodontics, and oral surgery.
Prerequisite: DEN 1006.

DEN 1008 Dental Office Management II 3 0 3

Principles and procedures related to management of the dental office, including main-

tenance of inventories, ordering of supplies, patient records, financial records, making appointments and establishing favorable patient relations.
Prerequisite: DEN 1005.

DEN 1009 Dental Office Practice I 0 12 4

Introduction to practice in the dental office or dental clinic, emphasis is on the role of the dental assistant in the operatory in a variety of dental procedures.
Prerequisite: DEN 1008.

DEN 1010 Dental Office Practice II 0 27 9

Practice in the dental office or dental clinic; rotation of assignments to encompass experience in office management, the dental laboratory, and the operatory. Emphasis on chairside assisting in a variety of clinical procedures.
Prerequisite: DEN 1009.

DEN 1012 Dental Roentgenology 2 6 4

Study of principles related to exposing, processing, and mounting dental x-ray. Radiation hazards and safety measures employed for protection of patient and self are stressed.

DEN 1013 Oral Health Education 1 2 2

Designed to present information on deposits and stains, dental caries and periodontal disease as related to prevention and control with emphasis on development of self confidence in interpreting dental health information and in demonstrating techniques to individuals and groups.

DESIGN (DES)

DES 101 Basic Drawing and Design 3 9° 6

An introduction to drawing and basic design fundamentals and principles. Emphasis will be placed on line, two and three-dimensional shapes, perspective, light and shade, equipment and materials of the art and design profession.

DES 107 Drawing 0 6° 2

A study of the body structure. A live model will be used with emphasis on proportioning, masses and movement.

DES 108 Illustration 0 6° 2

Continuation of DES 107. Using the figure as our environmental element in simulated daily activities. Distortion of the figure in the form of cartoons, illustrations, and other experimental use.
Prerequisite: DES 107.

DES 110 Creative Problem Solving 3 0 3

The aim of this course is to improve attitudes and thinking abilities, to develop a strong innovation to utilize one's creative potential, to develop a greater curiosity in problem solving, and to gain open-mindedness toward ideas of others. Special emphasis is placed on individual and group brain storming through the creative problem solving process.

DES 116 Basic Photography 2 6° 4

An introduction to the field of photographs, photographic equipment and materials.

A study of the fundamental techniques of the camera and its expressive possibilities in relation to the field of design and visual communications. Assigned camera projects, darkroom procedures and equipment.
Prerequisite: None.

DES 124 Type and Lettering 3 6° 5

Hand lettering, equipment and materials, type, and copy fitting. Emphasis will be placed on the use of type and lettering as an element of visual communications.

DES 210 Advertising and Publication Design I 3 6° 6

An introduction to cartooning, intermediate layout and design techniques for printing. Laboratory assigned graphical problems will cover such topics as color separation, halftones, and materials for the development of posters, show cards, banners, hand-lettered documents, brochures and folders.
Prerequisit: DES 218.

DES 211 Three Dimensional Design 1 3° 2

The student will have an opportunity to depart from the two-dimensional and work with elements in the round. Using a combination of materials the student will exercise his creativity with problems such as free forms, mobiles and packaging.

DES 216 Photography II 3 4 5

Designed to acquaint the student with large format cameras, filter use in black and white and color photography, auxiliary lenses in 35 mm. format (wide-angle and telephoto), macrophotography, artificial light photography including strobe lighting, studio lighting, color slide photography and development, basic retouching and air brush techniques, slide and negative manipulation (sandwiching, double exposure).
Prerequisite: Photography I

DES 218 Commercial Graphics and Photography 3 6° 5

Introduction to layout and design for printing. Mechanicals and basic printing reproductive processes.
Prerequisite: DES 124.

DES 220 Advertising and Publication Design II 3 6° 6

Advanced problems in layout and design techniques for printing, illustration, cartooning, animation, display design and lettering. Laboratory and graphic problems dealing with magazine and book illustration, the fashion figure, outdoor sign writing, displays and exhibits for business and industry.
Prerequisite: DES 210.

DES 230 Advertising and Publication Design III 3 6° 6

A course providing simulated professional working conditions utilizing advanced layout and design techniques for printing. Each student will explore a variety of problems, and present his solutions for general class critique and discussion. This course will climax with the review and presentation of the student's individual portfolio of professional work.
Prerequisite: DES 220.

DES 238 Case Studies 3 0 3

Studies, discussions and analysis of advertising cases of recent past—up to the present, involving advertising campaigns of various companies and their different marketing strategies.

DES 239 Professional Practices and Procedures 3 6 5

On the job conduct and day to day operating policies, procedures, organization and direction of art in studios, free-lance, advertising agencies, industrial art departments and retail art departments. Simulated and actual job experiences.

DES 240 Production I 3 6 6

An introduction to the mechanical requirements for the reproduction of art work. A study of Graphic Arts terminology and techniques of existing printed material.

DES 242 Production II 3 6 6

Continuation of production I with emphasis on the physical requirements of art work and production techniques for offset and letterpress printing of brochures, folders and small publications.

DES 244 Production III 3 6 6

Continuation of Production II with emphasis on effective, efficient planning and production of art work for large publications.

DES 248 Air Brush 2 3° 3

This course is designed to develop a working knowledge of air brush maintenance and fundamentals such as, line work, flat washes, graded washers, rendering basic forms, transparent and opaque colors; techniques used in rendering pictorial forms, such as products, figures, technical and architectural—including photo retouching.
Prerequisite: DES 239.

DES 249 Architectural Rendering 2 3° 3

Application and presentation of architectural subjects through the use of various kinds of materials and techniques of rendering.
Prerequisite: DES 239.

DES 250 Technical Illustration I 3 9° 6

Introduction to Technical Illustration. A study of isometric theory dealing with basic tools and equipment.
Prerequisite: DFT 102.

DES 251 Technical Illustration II 3 9° 6

A continuation of the study of basic technical illustration theory, tools and equipment.
Prerequisite: DES 150.

DES 252 Technical Illustration III 3 9° 6

A development of the techniques necessary to utilize the materials and equipment of the illustrator. A study of axonometric theory and use in illustrations. Project materials from previous courses will be used as problem assignments.
Prerequisite: DES 251.

DES 262 Technical Publications 2 3° 3

A study of methods of producing diagrams and handbook illustrations for technical publications.
Prerequisite: DES 251.

DRAFTING (DFT)

DFT 101 Technical Drafting 2 4 3

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced.
Prerequisite: None.

DFT 102 Technical Drafting 2 4 3

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphic analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and developments of various types of geometrical objects.
Prerequisite: DFT 101.

DFT 103 Technical Drafting 1 6° 3

Intersection and developments and their practical solutions. Where applicable, model solutions accompany the problems. The various techniques employed to produce and render isometric and oblique drawings, isometric, dimetric and trimetric projections, will be included.
Prerequisite: DFT 106.

DFT 118 Drafting and Blueprint Interpretation 0 6 2

Basic drafting techniques are covered to provide a working knowledge of drafting as a tool for communicating ideas. Reading and interpreting of blueprints is emphasized.
Prerequisite: None.

DFT 201 Technical Drafting 2 6° 4

Applications and constructions of charts, graphs, and nomographs in engineering and technical data. Screw threads, springs, keys, rivets, piping, and welding symbols, methods of representing and specifying will be covered. Basic mechanisms of motion transfers, gears and cams, will be studied and drawn with emphasis on methods of specifying, calculating, dimensions, and delineating.
Prerequisite: DFT 103.

DFT 204 Descriptive Geometry 2 4 4

Graphic analysis of space problems involving points, lines, connectors, and a combination of these. Practical design problems will be stressed with analytical verification where applicable. Visualization shall be stressed on every problem.
Prerequisite: DFT 102.

DFT 205 Design Drafting I 2 6° 4

Basic design is introduced in the study of motion transfer mechanisms as they relate to power trains. Principles of design sketching, design drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices constitute areas of

study. Types and methods of specifying materials and workmanship are an integral part of the course.
Prerequisites: DFT 204, MAT 102, PHY 102.

DFT 206 Design Drafting II 2 6° 4

Research to solve a problem in design by consulting various manuals, periodicals, and through laboratory experiments. A written technical report, preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem.
Prerequisites: DFT 205, MEC 210.

DFT 211 Mechanisms 3 2 4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkage, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains.
Prerequisites: DFT 201 & 204, MAT 103, PHY 106.

DFT 212 Jig and Fixture Design 2 6° 4

Commercial standards, principles, practices and tools of jig and fixture design. Individual project and design work to acquaint students with the types of jigs and fixtures and their design.
Prerequisites: DFT 205, DFT 211.

DFT 226 Air-Conditioning Systems Drawing 0 6° 2

Drawing of air-conditioning systems and study of related architectural and structural elements. Sheet metal intersections and developments and types of duct installation. Air-conditioning and refrigeration layouts, diagrams, and schematics.
Prerequisites: DFT 102, AHR 103, AHR 201, AHR 216.

DFT 232 AHR Drafting 2 4 3

Drawing of air-conditioning systems and study of related architectural elements. Emphasis will be placed on preparing orthographic and isometric presentations of duct systems, mechanical layouts, piping installations, electrical schematics and diagrams.
Prerequisite: None.

DFT 1101 Schematics & Diagrams: Power Mechanics 0 3 1

Interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes.

DFT 1104 Blueprint Reading: Mechanical 0 3 1

Interpretation and reading of blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes.
Prerequisite: None.

DFT 1105 Blueprint and Reading: Mechanical 0 3 1

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes.
Prerequisite: DFT 1104.

DFT 1106 Blueprint Reading: Mechanical 0 3 1

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly.
Prerequisite: DFT 1105.

DFT 1116 Blueprint: Air Conditioning 1 3 2

A specialized course in drafting for the heating, air conditioning and refrigeration student. Emphasis will be placed on reading of blueprints that are common to the trade; blueprints of mechanical components, assembly drawings, wiring diagrams and schematics, floor plans, heating system plans including duct and equipment layout plans, and shop sketches. The student will make tracings of floor plans and layout air conditioning systems.
Prerequisite: DFT 1104.

DFT 1120 Drafting I 2 4 4

An introduction to drafting and the study of drafting practices. Instruction is given in the selection, use and care of instruments, singlestroke lettering, applied geometry, freehand sketching consisting of orthographic and pictorial drawings. Orthographic projection, reading and instrument drawing of principal views, single auxiliary views (primary), and double (oblique) auxiliary views will be emphasized. Dimensioning and note practices will be studied with reference to the American Standards Association practices. Methods of reproducing drawings will be included at the appropriate time.
Prerequisite: None.

DFT 1121 Drafting II 2 4 4

A Continuation of DFT 1120.
Prerequisite: DFT 1120.

DFT 1122 Drafting III 2 4 4

The trainee will study simple and successive revolutions and their applications to practical problems. Sections and conventions will be studied and both detail and assembly sections will be drawn. Intersections and developments will be studied by relating the drawing to the sheet metal trades. Models of the assigned drawings will be made from construction paper, cardboard, or similar materials as a proof of the solution to the problems drawn.

Methods of drawing and projecting axonometric, oblique, and perspective drawings will be studied with emphasis on the practical applications of pictorial drawings. Various methods of shading will be introduced and dimensioning and sectioning of oblique and axonometric pictorials will be done.
Prerequisite: DFT 1121.

DFT 1123 Drafting IV 2 4 4

A continuation of DFT 1122.
Prerequisite: DFT 1122.

DFT 1125 Descriptive Geometry 2 3 3

Graphical analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Included are problems dealing with solid geometry theorems. Where applicable, each graphical solution shall be accompanied by the analytical solution.
Prerequisite: DFT 1121.

DFT 1130 Drafting V 2 4 4

An introduction to mechanical drafting beginning with problems concerning precision

and limit dimensioning. Methods of fastening materials, and fasteners: keys, rivets, springs, and welding. Symbols will be studied and drawings will be made in involving these items. Principles of design will be introduced with the study of basic mechanisms of motion transfer; gears, cams, power trains, pulleys, belting and methods of specifying and calculating dimensions will be studied. Drawings will be made involving these mechanisms.
Prerequisite: DFT 1123

DFT 1131 Drafting VI 2 4 4

A continuation of DFT 1130.
Prerequisite: DFT 1130

DFT 1132 Drafting VII 2 4 4

Principles of design sketching, design drawings, layout drafting, detailing from layout drawings, production drawings and simplified drafting practices constitute areas of study. Forging and casting drawings will be made from layouts. Specifications, parts list and bill of materials are emphasized in this course. The student will develop a complete set of working drawings of a tool, jig, fixture or simple machine and learn principles of design, handbook and manual usage.
Prerequisite: DFT 1131.

DFT 1133 Drafting VIII 2 4 4

A continuation of DFT 1132.
Prerequisite DFT 1132.

DFT 1150 Duct Layout and Fabrication 2 4 4

Work in drafting room with instruments developing patterns on paper for popular duct fittings. Proper layout procedures are followed in work on paper including square and radius elbows, offsets, transitions, "y ' branches and square to round fittings.

DFT 1220 Shop Sketching 0 3* 1

Development of accurate freehand sketches of machine parts, visual solution in orthographic and pictorial will be rendered with basic dimensions. Speed, accuracy and neatness will be emphasized.
Prerequisite: None.

DFT 1221 Machinist Drafting I 0 4 2

A course designed to familiarize students with drafting equipment, procedures, and techniques. Emphasis to be placed on 3-view drawing solutions with dimensions.
Prerequisite: DFT 1220.

DFT 1222 Machinist Drafting II 0 4 2

An advanced course in drafting practices. More details, assemblies, sub-assemblies and reproduction processes will be included. Emphasis will be placed on accuracy, neatness, speed, and legibility.
Prerequisite: DFT 1221.

ECONOMICS (ECO)

ECO 102 Economics 3 0 3

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large.
Prerequisite: None.

ECO 104 Economics 3 0 3

Greater depth in principles of economics, including a penetration into the composition and pricing of national output, distribution of income, international trade and finance, and current economic problems.
Prerequisite: ECO 102.

ECO 201 Labor Economics and Labor Relations 3 2 4

Emphasis is placed on the history of the labor movement in the United States, the development of methods and strategies by labor organizations and by management, the shift in the means of public control; and the factors of income and economic security.
Prerequisite: ECO 104.

ELECTRICAL (ELC)

ELC 101 Fundamentals of Electricity 4 4 or 6 6

Elementary principles of electricity including: basic electric units, Ohms law, Kirchhoffs law, network theorems, magnetics, basic electrical measuring instruments, inductance, capacitance, sine wave analysis, and non-resonant resistive, inductive and capacitive networks.
Prerequisite: None.

ELC 102 Fundamentals of Electricity 4 4 or 6 6

Series and parallel resonant-circuit analysis, resonant and non-resonant transformer analysis, basic diode power supply analysis, introduction to non-linear resistive control devices, and introduction to electro-mechanical devices.
Prerequisite: ELC 101.

ELC 1102 Applied Electricity 2 3° 3

The use and care of test instruments and equipment used in servicing electrical apparatus for air conditioning and refrigeration installations. Electrical principles and procedures for trouble-shooting of the various electrical devices used in air conditioning, heating, and refrigeration equipment. Included will be transformers, various types of motors and starting devices, switches, electrical heating devices and wiring.
Prerequisite: PHY 1101.

ELC 1112 Direct and Alternating Current 5 15° 10

A study of the structure of matter and the electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. Analysis of direct current circuits by Ohm's law and Kirchhoff's law: sources of direct current potentials. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis.
Prerequisite: None.

ELECTRONIC DATA PROCESSING (EDP)

EDP 103 Introduction to Computer Concepts 4 0 4

An introductory course in computers for the student who plans to pursue the degree in data processing as well as the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required.

EDP 105 Keypunching 2 6 4

A study of the keypunch machine. Instruction emphasizes the correct techniques,

mastery of the keyboard and development of speed and accuracy. The student learns and drills on the numeric keyboard, the alphameric keyboard and program drum card and preparation and use.
Prerequisite: None.

EDP 110 Functional Wiring 3 2 4

A study of unit record procedures and operating practices. Student laboratory work emphasizes concepts of punched-card data processing equipment.
Prerequisite: None.

EDP 114 Compiler Language I 2 4 4

A fundamental course in Fortran or PL/1 programming. The Fortran or PL/1 language structure, statements and programming methods and techniques are studied. The student will develop program logic and programs for solving sample problems.
Prerequisite: EDP 103.

EDP 116 Assembler Language 2 4 4

The study of symbolic computer languages with emphasis on a particular example of such a language. The student will develop program logic and write programs using assembly language to solve appropriate assigned problems.
Prerequisite: EDP 103.

EDP 118 Compiler Language II 2 4 4

This course is designed to provide basic training in COBOL programming. The COBOL language structure, statements, and programming methods and techniques are studied. The student will develop program logic and write COBOL programs for solving sample problems.
Prerequisite: EDP 103.

EDP 211 Data Processing Application I 2 4 4

This course is designed to provide the student with sufficient knowledge in computer methodology to permit the use of computers in business. Emphasis will center around the use of the Fortran language to solve both business and scientific type problems encountered in the business environment. Statistical analysis will be studied as an aid to business decision-making.
Prerequisites: EDP 114, MAT 214.

EDP 212 Data Processing Application II 2 4 4

This course is designed to afford the student the opportunity to get into more complex problem solving. The SORT feature and the REPORT WRITER feature are also studied and applied to problems.
Prerequisite: EDP 118.

EDP 213 Computer Systems I 2 2 3

A study of computer systems involving such concepts of architecture and/or programming as channels, interrupts, etc. This course also provides a continuing study of Assembler Language and a study of data set storage devices and methods of data set organization.
Prerequisite: EDP 116.

EDP 214 Computer Systems II 2 2 3

A continued study of computer systems. This course will include: a study of job con-

trol language, programming for data sets, and a closer look at an operating system. Hardware systems will be included through a study and comparison of systems currently available.
Prerequisite: EDP 213.

EDP 215 Statistical Programming 2 4 4

Practical experience in the statistical solution of business problems through the use of computers. Measures of central tendency, variation, confidence intervals, tests of hypothesis, and relationships between variables. Methods of organizing, analyzing, interpreting and presenting data are studied.
Prerequisites: EDP 114, MAT 214.

EDP 217 Numerical Analysis Programming 2 4 4

A development of the mathematical principles upon which many computing methods are based. Topics introduced include theory of errors, numerical integration and differentiation, summation procedures, numerical solution of equations, and approximations of various types.
Prerequisites: EDP 114, MAT 201.

EDP 218 Data Processing Project 1 8 5

Individual assignments of a carefully selected project will be the work of the student during this course. It will give the student an opportunity to initiate and carry out a project taken from outside the school. This course places the responsibility upon the student to solve a significant problem with a minimum of assistance from the instructor.
Prerequisite: Sixth quarter standing and approval of instructor.

EDP 231 Computer Language Survey 3 0 3

This course is designed to provide additional programming languages to the student. The languages to be studied are subject to be changed depending on what the most popular languages are at the time this course is being taught. The intent of the course is to broaden the students' knowledge of programming languages.
Prerequisites: EDP 114, EDP 116, EDP 118.

EDP 234 Linear Programming 3 0 3

Lecture and problems encompassing the scope and potential of using mathematical programming with computers to increase industrial efficiency. This course presents the network technique of management planning, scheduling and control. Basic rules of network planning are presented with laboratory assignments designed to implement the theoretical aspects of Critical Path Method (CPM).
Prerequisite: Fifth quarter standing.

EDP 240 Use of Package Programs 2 2 3

A study of how to effectively use programs and packages that are available to save on actual programming time. Lectures and lab assignments will be given in the use of both user written and manufacturer supplied routines. Basic contents will include: Statistical Analysis System (SAS), Tele-Storage and Retrieval System (TSAR) and the IBM Utilities for System/360.
Prerequisite: EDP 214.

EARLY CHILDHOOD EDUCATION (EDU)

EDU 101 Activities for Young Children 5 0 5

Individual and group exploration of activities and media for promoting optimal development of children. Designed to develop an appreciation for this need for play and the activities appropriate at various stages of development.

EDU 103 Music in the Early Childhood Program 3 0 3

Designed to develop an awareness of the fundamentals of music and the types of music appropriate for young children. Study of the various methods of integrating music into the total program of activities and utilizing a wide variety of materials for rhythm, instrumental performance, dramatic play and singing.

EDU 105 Science 3 2 4

Study of basic concepts from biological, physical and natural sciences. Laboratory experiences provide opportunities to develop projects for demonstrating simple science concepts to young children, utilizing materials from nature and simple equipment. Each student will develop a series of projects appropriate for a specific level of development.

EDU 108 Art in the Early Childhood Program 3 2 4

Study of art media in relation to the creative process in young children, of the educational component that each medium reinforces, and of the ways a variety of low-cost art activities can be incorporated into a program for young children. Laboratory sessions provide first-hand experience with all of the media, opportunities to explore the uses of each, and practice in the care and storage of materials. Each student will plan a meaningful sequence of art activities which could be incorporated into a program for young children.

EDU 130 Programming for Young Children 3 3 4

Study principles and practices of early childhood education — the types of experiences, facilities, and media which will promote optimal development of each child. Opportunities to observe various types of early childhood programs will be provided. Techniques of observation will be explored.

EDU 132 Nutrition and Health 5 0 5

(1) Study of the influence on physical and emotional health from infancy to adulthood. The practices and procedures for promoting good health among children in group care will be emphasized.

(2) Study of basic nutrition with emphasis on the importance of balanced diet in growth and maintenance of healthy children.

EDU 135 Human Growth and Development I 5 0 5

A study of the developmental sequence of the prenatal, infant and early childhood periods. Emphasis is given to the factors influencing development and the importance of experiences in establishing patterns of behavior, attitude and interpersonal skills.

EDU 140 Working with Young Children I 3 9 6

Designed to develop skill in adapting activities to the individual needs of children at the pre-school level and to develop an understanding of basic methods of concept and language development. Designed to devlop insight into the student's own attitude and biases as a basis for self-understanding and increased capacity for relating to children.
Prerequisite: EDU 130, 101, 135, 132.

EDU 145 Working with Young Children II 3 9 6

Designed to give the student an awareness of the basic programs of the primary grades with emphasis given to development of language arts and computational skills. Experiences will orient the student to the duties of the teachers' assistant in the primary grades.
Prerequisite: EDU 140.

EDU 148 Group Care of Infants 3 6 5

A review of development from birth to age three. An in-depth study of the problems specific to group care of children under three. Techniques for the care and guidance of the infant will be studied, as will the providing of optimum safety, stimulation, and warmth.
Prerequisite: EDU 135, 132.

EDU 202 Seminar-Practicum in Pre-School 4 15 9

Advanced program of supervised practice in the care and education of the pre-school child.
Prerequisite: EDU 140, 145.

EDU 203 The Exceptional Child 3 12 7

Study of children with developmental variations requiring modification in activities. Consideration is given to recognition of problems, community resources, and appropriate activities for the child with exceptional deviations in personality or physical development. Lab experience provides the opportunity to assist in the care and education of the exceptional child.
Prerequisite: EDU 135, 140.

EDU 204 Parent Education 3 0 3

Study of ways parents can be involved in the child development center, of the purposes and value of home visitation, and of the techniques for reporting child progress to parents. The role of the early childhood assistant in aiding parents in the guidance of the child's development is emphasized. Each student will develop a series of programs appropriate for presentation to the parents of pre-school children.

EDU 227 Programming Through Learning Resources 3 0 3

Introduction to the multi-media approach to teaching young children. Students will have the opportunity to explore all phases of the library, including cataloguing, reference materials, periodicals and special services such as story-telling. Experiences will be provided in the use of audio-visual equipment, basic office machines, and the care and repair of books. Experience with a laminating process, making transparencies, placing orders for films, and other visual aids, will be provided.

EDU 236 Human Growth and Development II 5 0 5

A detailed study of the developmental sequence during middle childhood and adolescence; including the enviromental and social factors which influence developmental rates, the formulation of behavior patterns, and establishment of value systems and interests.
Prerequisite: EDU 135.

EDU 250 Special Problems 3 0 3

Directed study of a specialized area of early childhood, appropriate to the individual career interests of students.
Prerequisite: EDU 140, 145.

EDU 252 Seminar-Practicum in the Elementary School 4 15 9

Advanced program of supervised practice as an assistant in the education of the child age 5 to 8.
Prerequisite: EDU 140, 145, 202.

CHILD CARE (EDU)

EDU 1101 Activities for Young Children 3 3° 4

Designed to promote understanding of the need for play and developmental activities for children. Emphasis will be placed on the knowledge of and implementation of activities appropriate to children at various levels of development.

EDU 1103 Music in the Early Childhood Program 3 3° 4

Study of music which is appropriate for young children and ways of integrating music into the total program of activities. Students learn to utilize a wide variety of materials for rhythm, instrumental performance, and dramatic play. Laboratory sessions provide opportunities for learning songs and developing extensive files; field experience provides opportunities to participate in and evaluate music activities for various age groups.

EDU 1105 Science in the Early Childhood Program 3 3° 4

Study of those scientific facts, concepts, and phenomena that are of interest to young children. Laboratory experiences provide opportunities to carry out simple experiments in which young children could participate. Each student will plan a science program which could be used as an integral component of the overall program for young children in group care.

EDU 1108 Art in the Early Childhood Program 3 2 4

Study of art media in relation to the creative process in young children, of the educational component that each medium reinforces, and of the ways a variety of low-cost art activities can be incorporated into a program for young children. Laboratory sessions provide first-hand experience with all of the media, opportunities to explore the uses of each, and practice in the care and storage of materials. Each student will plan a meaningful sequence of art activities which could be incorporated into a program for young children.

EDU 1110 Literature in the Early Childhood Program 3 0 3

Study of literature for young children, with emphasis on criteria for evaluating the literary value of children's books. Extensive reading and development of a topical file provide resources for selection of appropriate materials to use in field practice, to develop skill in oral reading and in story telling.

EDU 1120 Communicating Effectively with the Young Child 3 0 3

Study of language development in relation to adult models and the child's early experiences. Remedial approaches to improving the student's oral communication, in order to serve as an effective model. Case studies provide opportunities to analyze problems of adult-child communication and to derive guidelines for establishing effective communication patterns with young children.

EDU 1123 Conceptual and Language Development 3 0 3

Study of means for helping children develop in their ability to communicate and to formulate concepts about their environment. Emphasis is on utilization of all facets of the program to reinforce concept development and to increase vocabulary through stimulation of oral communication. Reading assignments and recordings of children's speech provide opportunities to study speech development, to establish realistic expectations and to identify children with needs for special attention to language development.

EDU 1125 Parent Education 3 0 3

Designed to develop understanding of the rewards and difficulties of parents. Role playing provides opportunities to practice ways of working with parents through home visits, individual conferences, informal conversations, and group meetings. The relationship of the child care facility to other community agencies is explored, including ways each can best serve children and their families. Emphasis is given to the responsibility of child care workers to know about community resources, to be sensitive to needs of parents, and to help parents become aware of and utilize services of the community.

EDU 1130 Day Care for Young Children 2 3° 4

Designed to develop increased self-awareness, and the perception of self in the field of child care. The role and responsibilities, the ethics, liabilities and potentialities of being employed in child care will be explored in depth. Opportunities to observe child care in various settings will be provided.

EDU 1132 Health and Nutrition 4 3° 5

(1) Study of its influence on physical and emotional health during infancy and early childhood. The practices and procedures for promoting good health among children in group care will be emphasized.

(2) Study of basic nutrition with emphasis on the importance of balanced diet in the growth and maintenance of healthy children.

EDU 1135 Human Growthand Development 5 3° 6

A study of the developmental sequence of the prenatal, infant and early childhood periods. Emphasis is given to the factors influencing development and the importance of experiences in establishing patterns of behavior, attitudes and interpersonal skills. Opportunities to observe children at different stages of development will be provided.

EDU 1140 Working with the Young Child 5 3-9 6-8

An introduction to the relationship of developmental stages to behavior patterns, with emphasis on those methods of interacting with children which promote healthy progress from one developmental stage to the next. Discussions and assignments are designed to develop insight into the student's own attitudes and biases, as a basis for self-understanding and increased capacity for relating to children and adults effectively.

EDU 1145 Working with the Young Child with Problems 5 3-9* 6-8

Further study of behavior in relation to developmental stages, with emphasis on behavior which is symptomatic of emotional or physical handicaps. Case studies and field observations are utilized for analysis of problems commonly encountered in group situations. Effective interaction and other types of remedial help are explored. Behavior of the child care worker is analyzed as a possible factor in contributing to or alleviating maladjustment, with focus on the importance of constructively utilizing an analytic approach to self-development and to improved interpersonal skills.

EDU 1015 Group Care of Infants 3 6 5

Study of development from birth to age three and of the problems specific to group care of children under three. Each student will develop a plan to care for a group of five children; the plan must reflect concern for the child's total development and show procedures for dealing with the practical problems of providing safe care for infants and toddlers.

EDU 1149 Administration and Supervision in a Preschool Facility

3 2 4

Designed to assist students to develop a philosophy of preschool education which can serve as a guide in establishing policies and procedures for the operation of a center for group care of young children. Emphasis is given to principles of supervision and techniques for promoting acceptance of a philosophy by the total staff.

EDU 1150 Seminar-Practicum in Early Childhood Education 4 6-15* 6-9

Advanced program of supervised practice in the care and education of young children.

ELECTRONICS (ELN)

ELN 101 Electronic Instruments and Measurements 1 4 or 6 3

A study of basic electronic instruments, their theory of operation, function, tolerances, and calibration. Both service and laboratory instruments will be studied. Laboratory experience will provide application of each type instrument studied.
Prerequisite: ELC 102.

ELN 105 Control Devices 5 4 or 6 7

A study in depth of the electrical characteristics of vacuum tubes and transistors. Basic parameters and applications of each type device to the three configurations of a three terminal two port system will be included.
Prerequisite: ELC 102.

ELN 205 Applications of Vacuum Tubes and Transistors 5 4 or 6 7

Practical applications of vacuum tubes and transistors to basic audio amplifiers, radio frequency amplifiers, detectors, modulators and ocsillators.
Prerequisite: ELN 105.

ELN 208 Solid State Thin Film Devices 5 2 6

A study of the processes by which thin-film and semiconductor circuits are fabricated. Oxide isolation and metal-oxide-semiconductor field-effect transistors are covered at length.

Various types of applications are presented such as, logic networks, the computer-on-a-slice concept, the use of feedback in integrated circuits, tuned integrated circuits, thin-film thermollectrics, and microwave applications of integrated-circuit techniques.
Prerequisite: CHM 111.

ELN 210 Semiconductor Circuit Analysis 5 2 or 3 6

A study in some depth of the analysis and design of transistor circuits. Network theorems and equivalent circuits are used extensively in evaluating total circuit performance. Device peculiarities and limitations pertinent to reliable operations are considered. H. Y. Z. and T, parameters are employed as well as signal-flow graphs.
Prerequisite: ELN 105.

ELN 214 Wave Shaping and Pulse Circuits 2 2 or 3 3

Broadband amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, chopper amplifiers, clipper and clamper circuits.
Prerequisites: ELN 105, MAT 103.

ELN 215 Wave Shaping and Pulse Circuits 2 2 or 3 3

Pulse techniques, diode switches, gates, step-counters, restorers and other specific circuits which function as switches.
Prerequisite: ELN 214.

ELN 220 Electronic Systems 5 4 or 6 7

A block diagram course investigating numerous electronic systems. Modules, or blocks of various circuits already studied are arranged in various manners to produce complex systems. Systems will be explained and reduced to functions and then to block diagrams. AM, FM, and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated systems, computers, telemetry, navigational systems, sonar and radar will be considered.
Corequisite: ELN 215.

ELN 227 UHF and Microwave Systems 5 4 7

A study of UHF and VHF components, circuits, and measurement techniques. The use of distributed constant elements, waveguides and coaxial cables, microwave links, high frequency oscillators, magnetrons, klystrons, traveling wave tubes. An introduction to the use of the Smith Chart.
Prerequisite: ELN 225.

ELN 230 Television Systems 4 6 7

A study of the principles of television including the television system, camera tubes, scanning and synchronization, composite video signal, receiver circuits, transmitting equipment, color television, and closed-loop systems.
Corequisite: ELN 214.

ELN 240 Digital Computers 3 0 3

An exploration into the methodology of counting and computing. Various computer techniques will be investigated including: non-sinusoidal waveforms, binary and decade counters, industrial counters, readout devices, logic circuits, arithmetic circuits, storage devices, input-output devices, computer control, analog and digital converters.
Prerequisite: ELN 214.

ELN 245 Electronic Design Project 0 4 2

Students are required to design and construct a project approved by the instructor. Includes selection of project, design, construction, and testing of completed project. Projects may include: AM or FM transmitters or receivers, amplifiers, test equipment, control devices, simple counters, lasers, masers, etc.
Prerequisite: ELN 205.

ENGLISH (ENG)

ENG 101 Composition I 3 0 3

The study and practice of basic elements of effective essay writing using an expository approach. Principles of grammar, and punctuation are emphasized through a functional approach.
Prerequisite: Successful score on English placement test.

ENG 102 Composition II 3 0 3

A continuation of ENG 101, based on interpretative reading. Using an analytical approach the novel is introduced as another form of writing. Techniques for writing a research paper are introduced.
Prerequisite: ENG 101.

ENG 103 Report Writing 2 2 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. The course will include lectures on major types of reports, independent study and investigation supervised by a department representative and the ENG 103 instructor, and, after a review of the report(s) by a department representative, an oral presentation and interaction-evaluation by students and instructors. In addition, a review of some major types of business correspondence will be made.
Prerequisite: ENG 102.

ENG 204 Oral Communication 3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Particular attention is given to conducting meetings, conferences, and interviews.
Prerequisite: ENG 101.

ENG 206 Business Communication 3 0 3

Develop skills in techniques in writing business communications including business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, orders, acknowledgements, remittances, and inquiry.
Prerequisite: ENG 102.

ENG 207 Literature in the Early Childhood Program 3 0 3

Study of literature for young children with emphasis on criteria for evaluating the literary value of children's books. Extensive reading and development of a topical file provide resources for selection of appropriate materials to use in field practice, to develop skill in oral reading and in story-telling.

ENG 208 Reading Enrichment 3 0 3

This course is designed to guide the student in a better understanding and a greater appreciation of our literary heritage.

In general, selected poetry, short stories, plays, and the novel will be studied.

Emphasis will be given to some of the influential and outstanding writers and their contributions.
Prerequisites: None.

ENG 210 Advanced Writing 3 0 3

This course is designed for students who show potential and are interested in further pursuing writing skills.

Specialized techniques other than those used in general composition will be used with special emphasis given to fiction.

Other categories of writing will be covered according to student interest.
Prerequisite: ENG 102, permission of the instructor.

ENG 212 Journalism I 2 2 3

A course offering practical experience in newspaper production in connection with the publication of the school newspaper and other publications. Interviewing, reporting, and editing will be covered with some emphasis being given to layout procedures. Students interested in photography will have an opportunity to utilize this media.
Prerequisite: ENG 102.

ENG 214 Copywriting I 3 0 3

A study of creative copywriting for advertising and other material. The theory, practice and techniques used in originating copy for various media directed to selected audiences. Emphasis is placed on originality of ideas, interaction-evaluation by students and instructors, and reviews of existing copy for media.

ENG 216 Copywriting II 3 0 3

Continuation of copywriting I with emphasis placed on the more complex problems of planning and producing copy for complete campaigns directed to selected audiences.

ENG 1101 Reading Improvement 2 0 2

This course is designed to improve the student's reading ability. Special emphasis is given to vocabulary, study habits, comprehension, and other techniques.

ENG 1102 Communication Skills 3 0 3

Designed to promote effective communication through correct language usage in speaking and writing.

ENG 1103 Report Writing 3 0 3

Fundamentals of correct language usage applied to report writing. Emphasis is on principles of report construction and application to various report forms.
Prerequisite: ENG 1102.

ENG 1105 Written Communications 3 0 3

Develops skills and techniques of writing communications including memos, committee reports, minutes of meetings, letters involving credit, collections, adjustments, complaints, recall, orders, acknowledgements, remittances, inquiry, patient discontinuing treatment, patient beginning treatment, concerning broken appointment, confirmation and goodwill (thank you, congratulatory, sympathy). The student will also develop skill in compiling, composing and submitting articles for publication in professional papers and journals.
Prerequisite: ENG 1102.

ENG 1115 Technical Communication 3 0 3

A basic course in report writing, speaking, and listening. A thorough study of industrial requirements for technical writing.
Prerequisite: None.

FIRE SCIENCE (FIP)

FIP 101 Introduction to Fire Protection Hazards 3 0 3

History and development of fire service, safety and security movements. The role of the fire service, protection and safety personnel. Ancillary organizations. Identification of general fire hazards and their causes and the application of fire protection principles to them.
Prerequisite: None.

FIP 102 Municipal Fire Protection 3 0 3

Fire department organization, personnel management, and the department's relationship with other city departments. Evaluation of public fire protection needs, financial factors, records and reports, equipment procurement policies, apparatus, tools, training needs and programs, maintenance needs and facilities, and other equipment necessary for modern fire protection.
Prerequisite: FIP 101.

FIP 103 Construction Codes and Material Rating 2 2 3

A thorough study of building codes applicable to fire prevention, and principles and practices used in various types of building construction. Fire resistance tests and ratings of building materials.
Prerequisite: FIP 101.

FIP 105 Applied Electricity for Fire Protection 3 2 4

A thorough study of methods and means of utilizing electricity to provide power. The installation and maintenance of electric circuit and machinery.
Prerequisite: None.

FIP 115 Fire Prevention Programs 3 0 3

Principles and application of fire prevention related to the community and industrial plants. The development and maintenance of fire prevention programs, educational programs, and inspection programs. Specific applications of related disciplines to fire prevention problems.
Prerequisite: None.

FIP 120 Municipal Finance 5 0 5

Municipal finance based on sound government principles and practice. A study of budget items, preparation of budget, justifying budgets, financial statements, cost accounting and record systems, taxation and audits.
Prerequisite: None.

FIP 135 Training Programs and Methods of Instruction 3 0 3

Purposes of fire service drills and training programs. The development and operation of the departments' training programs. Facilities and equipment necessary for modern training. Selecting and training the instructional staff. Suitable methods of instruction.
Prerequisite: FIP 115.

FIP 201 Fire Detection and Investigation 3 0 3

Determination of cause of accidental and incendiary fire, fire losses and loss of records, points of origin, location and preservation of physical evidence, and scientific aid to investigation. Courtroom procedure in presenting evidence. Motives and methods for fire setting and investigative methods are covered.
Prerequisite: None.

FIP 205 Industrial Hazards 3 2 4

A study of hazardous processes in industries such as petroleum, furniture, chemical, tobacco, metal, and textile, and the protection and precautions needed for personnel and property safety. Hazards that are related to heating plants, electrical systems, and storage in all industries.
Prerequisite: FIP 101.

FIP 208 Municipal Public Relations 3 0 3

A general survey of municipal public relations and their effect on the government process. Principles of public relations such as planning, staffing, controlling and directing information to the general public is studied. Emphasis is placed upon personal responsibilities, means of communications, policies and organization of an effective public relations program.
Prerequisite: None.

FIP 211 Grading of Fire Defenses 3 0 3

Insurance grading schedules and their principles of application. Methods of analyzing fire hazards and the effects of fire hazards on fire insurance rates. A study of the National Board Grading Schedule is made in detail with other schedules covered briefly.
Prerequisite: Consent of advisor.

FIP 216 Chemical & Radiation Hazards 3 2 4

Intensive study and analysis of the special hazards encountered in the chemical and petroleum industries. Radiation hazards, effects of radiation on humans, exposure control, radiological instruments, operational and decontamination procedures, common uses of radioactive materials, transportation, storage, application of special inspection procedures.
Prerequisite: FIP 218, FIP 101.

FIP 218 Chemistry of Hazardous Materials 3 2 4

Theories of combustion and extinguishment, including the analysis of flammable materials and the nature of extinguishing agents. The properties of matter affecting fire behavior. The application of the laws and principles of chemistry and physics to the use, storage, and disposal of flammable liquids, solids, gases and dusts.
Prerequisite: CHM 101.

FIP 220 Fire Fighting Strategy 3 2 3

The aspects of tactics and strategy in extinguishing fires. Pre-fire plans, mutual aid problems, techniques of using available equipment and manpower, conflagrations, techniques of predicting fires by fuel analysis. Emphasis will be on developing thinking skill in relation to crises.
Prerequisite: FIP 102.

FIP 225 Fire Protection Law 3 0 3

A study of law in relation to fire protection. Torts, Terms and Contracts studied by case method. Liability of fire protection personnel when making inspections, recommendations, fighting fires, and other tasks. Pertinent laws, ordinances, and codes and the responsibilities and powers of the individual or organization concerning enforcement.
Prerequisite: FIP 102.

FIP 226 Industrial Safety 3 0 3

A fundamental study of industrial safety records, development of safeguards, accident costs, and causes, job safety analysis, plants designed for safety, and safety maintenance. Methods of eliminating hazards including color coding, guards, and personal protective equipment. A study of the precautions and safeguards essential to protecting lives during fires in various types of occupancies. Exit code requirements, personnel protective devices, and practical safeguards will be studied. Review of case histories of fires and explosions which have resulted in loss of life to determine how these types of tragedies can be prevented.
Prerequisite: FIP 101.

FIP 230 Hydraulics and Water Distributive Systems 3 2 4

Mechanics of the flow of fluids through fire hose, nozzles, and appliances, pumps, standpipes, watermains, and other devices. Design, testing, and use of nozzles and appliances, pumps, and water distribution systems. Measurement of fluid flow and methods of determining quantities of water available from a distribution system. Practical applications of principles.
Prerequisites: MAT 101. PHY 101.

FIP 231 Sprinkler and Standpipe Systems 3 2 4

Types of sprinkler and standpipe systems, system devices and their operation, advantages of sprinkler systems, codes governing installation, water supply requirements testing, inspection, and maintenance.
Prerequisite: FIP 230.

FIP 235 Inspection Principles and Practices 3 4 5

A study of the fundamentals of fire inspections including standards, techniques of evaluation of hazards as to degree of the hazard and practical recommendations. Reports including maps and sketches of each building inspected. On-the-site inspections of buildings to locate hazards and to recommend safe practices and improvements.
Prerequisite: FIP 103, DFT 118.

FIP 240 Multiple Line Insurance & Rating Schedules 4 0 4

A study of multiple line insurance, types of policies, selection, rate making, settlement of claims, handling of risks, and self-insurance. Types of rating schedules including the analytic and mercantile schedule. Methods of determining fire rating classification.
Prerequisite: FIP 211.

FIP 245 Automatic Alarm and Extinguishing Systems 3 2 4

A study of the types of fixed extinguishing systems, standard and special fire alarm and fire detection systems; their operation, installation requirements, testing, inspection, and maintenance.
Prerequisite: FIP 105.

INDUSTRIAL SCIENCES (ISC)

ISC 102 Industrial Safety 3 0 3

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment; state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance`carrier and the Insurance Rating Bureau; and advertising and promoting a good safety and fire prevention program.
Prerequisite: None.

ISC 120 Principles of Industrial Management 3 2 4

The basic managerial decisions; organizational structure including plant location, building requirements, and internal factory organization; problems of factory operation and control, planning, scheduling, routing factory production, stores control, labor control, purchasing, cost control. Plant problems are utilized as lab experiments.
Prerequisite: None.

ISC 201 Industrial Organization and Management 3 0 3

Organizational structure for industrial management; operational and financial activities, including accounting budgeting, banking, credit and industrial risk, forecasting of markets, selection and layout of physical facilities; selection, training and supervision of personnel as found in typical industrial organizations.
Prerequisite: None.

ISC 202 Quality Control 3 2 4

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance.
Prerequisite: None.

ISC 203 Motion Study 3 2 4

Types of methods studies and their applications. Process charts, analysis sheets, time study, work simplification, skill and effort rating.
Prerequisite: None.

ISC 204 Value Analysis 3 0 3

The modern concept in the control of manufacturing production. This course will provide the students an opportunity to study a production system with the specific purpose of identifying unnecessary costs. The objective of the concepts and techniques of value analysis is to make possible a degree of effectiveness in *identifying* and *removing* unnecessary cost by the use of sound decisions through a common sense approach.
Prerequisite: None.

ISC 209 Plant Layout 3 2 4

A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and materials in a manufacturing operation.
Prerequisite: T-DFT 102, T-MEC 112.

ISC 210 Job Analysis and Evaluation 3 2 4

This study is based on product studies as well as personnel and wage program. The course utilizes the study of product design, value analysis, materials and processes as an intricate part of productive procedures.

ISC 211 Work Measurement 3 2 4

Principles of work simplification including administration of job methods improvement, motion study fundamentals and time study techniques. Use of flow and process charts; multiple activity charts, operation charts, flow diagrams and methods evaluation.
Prerequisite: ISC 210.

ISC 220 Management Problems 3 0 3

A study of personnel and production problems from the standpoint of the executive. Includes selection and development of products, control problems and techniques, development of standards, employee-employer relations, developing the executive staff. Cost sudies are utilized.
Prerequisite: ISC 120.

ISC 231 Manufacturing Cycles 5 0 5

Purchasing and distribution costs; consumption patterns; channels of distribution; marketing of consumer goods; shopping, specialty, agricultural and industrial goods; service marketing; functional middlement; speculation and hedging; wholesaling; shipping and warehousing; exporting and trade movements; standardization and grading; pricing, government regulation of competition; sales promotional activities; merchandising practices.
Prerequisite: None.

ISC 240 Applied Problems in Industrial Engineering 3 6 5

A practical problem will be given the student. Where possible, this problem will be from an actual industrial situation. The student will apply his knowledge from previous courses to solve the problem.

MATHEMATICS (MAT)

MAT 101 Technical Mathematics 5 0 5

The complex number system is developed as a super-set generated by fundamental operations on the natural number set. Fundamental algebraic operations, linear equations, rectangular coordinates, analytic geometry of a line systems of linear equations, quadratic equations and scientific notation are introduced. Topics are taught in a manner which allows the student to use them in practical application.
Prerequisite: Satisfactory evidence that admission requirements have been met.

MAT 102 Technical Mathematics 5 0 5

MAT 102 is a continuation of MAT 101. Advanced algebraic and trigonometric topics are studied in depth. Topics included are: quadratic and higher degree equations, roots, synthetic substitution, remainder and factor theorems, logarithmic and exponential functions and solutions of equations containing them, complex numbers, solution of oblique triangles, the general sine function, and the graphs of trigonometric functions.
Prerequisite: MAT 101.

MAT 103 Technical Mathematics 5 0 5

The fundamental concepts of analytic geometry and differential and integral calculus are introduced. Topics included are the conic sections and the general quadratic in two variables, limits, derivatives, differentials, and indefinite and definite integrals of algebraic functions.
Prerequiste: MAT 102.

MAT 110 Business Mathematics 5 0 5

This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business.
Prerequisite: None.

MAT 112 Business Mathematics for Data Processing 5 0 5

This is a course in Business Mathematics especially adapted to meet the needs of those students who have chosen the Business Data Processing option. It includes a study of the basic arithmetic methods of business calculations, record keeping, and problem solving. The mathematics necessary for a study of accounting is covered.
Prerequisite: MAT 101.

MAT 131 Elementary Technical Mathematics I 3 4 5

Included topics are Practical Number Systems, The Notions of Variables and Functions, Basic Algebraic Operations, Laws of Exponents and Radicals, and Equations and Formulas. Topics are taught in a manner which promotes their use in practical application.
Prerequisite: MAT 1102 or equivalent.

MAT 132 Elementary Technical Mathematics II 3 4 5

A continuation of MAT 131 which includes the topics Scientific Notation and Slide Rule Computations, Linear Equations, Proportion and Variation, Systems of Linear Equations, and Right Triangle Trigonometry.
Prerequisite: MAT 131.

MAT 201 Technical Mathematics 5 0 5

A continuation of MAT 103. More advanced concepts of differentiation and integration are considered. Included are graphs and derivatives of the trigonometric functions, exponential and logarithmic differentiation and integration, advanced integration techniques, polar equations, and parametric equations.
Prerequisite: MAT 103.

MAT 208 Calculus and Laplace Transforms for Electronics 5 0 5

An investigation of the methods of calculus which are of the most direct use in the study of electronic circuits. Introduction to selected topics from differential equations and Laplace transforms and applications of these methods to the solution of electronic circuit problems.
Prerequisite: ELN 214.

MAT 214 Statistics 5 0 5

The theory of statistics and its applicattion in modern business. Kinds of regularity that exist among random fluctuations. Experience in associating and using mathematical models to interpret physical phenomena and predicting the outcomes of experiments related to practical business problems.
Prerequisite: MAT 101.

MAT 219 Differential Equations 5 0 5

Methods of solving first-order and simple higher order ordinary differential equations and linear differential equations with constant coefficients; solution of differential equations by series; and numerical solutions of differential equations.
Prerequisite: MAT 201.

MAT 230 Boolean Algebra with Computer Applications 5 0 5

This course covers the language, laws, theorems, and equations of Boolean Algebra which, along with truth tables, Karnaugh maps, and logic diagrams will be used to design logic and switching circuits. Arithmetic in radices other than radix ten will be studied so that computer arithmetic problems may be understood. Examples of computer circuitry that may be studied are: encoding and decoding matrices, full adders, detect networks, ones and nines complement circuits, and others.
Prerequisite: MAT 101.

MAT 1101 Fundamentals of Mathematics 5 0 5

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Practice in depth.
Prerequisite: None.

MAT 1102 Algebra 5 0 5

Basic concepts and operations of algebra: historical background of our base-10 number system; algebraic operations: addition, subtraction, multiplication and division; fractions, letter representation, grouping, factoring, ratio and proportions, variation; graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction, substitution, graphing, exponents, logarithms, tables and interpolations.
Prerequisite: None.

MAT 1103 Geometry 3 0 3

Fundamental properties and definitions; plane and solid geometric figures, selected

general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations.
Prerequisite: None.

MAT 1104 Trigonometry 3 0 3

Trigonometric ratios; solving problems with right angles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems.
Prerequisite: MAT 1103.

MAT 1123 Machinist Mathematics 3 0 3

Introduces gear ratio, lead screw and indexing problems with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems; concludes with an introduction to compound angle problems.
Prerequisite: MAT 1104.

MECHANICAL (MEC)

MEC 101 Machine Processes 0 6° 2

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.

MEC 102 Machine Processes 0 6° 2

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice. Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed.
Prerequisite: MEC 101.

MEC 111 Manufacturing Processes 3 3* 4

A survey of manufacturing processes, machines, tools, and devices with regard to their capabilities, capacities, tolerances, finishes, etc. Product design, materials utilized, engineering nomenclature, and common terminology will be discussed.
Prerequisite: None.

MEC 112 Manufacturing Processes 3 3* 4

Process planning of operation sequences for efficient production, tool planning, and estimating. An introduction to metallurgy as well as characteristics of non-metallic materials.
Prerequisite: MEC 111.

MEC 116 Engineering Materials 3 0 3

Study and testing of the properties of ferrous and non-ferrous metals and plastics, load and strain measurements, behavior of materials under load, qualities other than strength and control of the properties of the materials.
Prerequisite: PHY 102.

MEC 205 Strength of Materials 3 2 4

Study of principles and analysis of stresses which occur within machine and structure elements subjected to various types of loads such as static, impact, varying and dynamic. Analyses of these stresses are made as applied to thin-walled cylinder and spheres, riveted and welded joints, beams, columns and machine components.
Prerequisite: PHY 106.

MEC 210 Physical Metallurgy 3 3* 4

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) structures, methods of designing crystal planes, liquid and vapor phases, phase diagrams, and alloy systems.
Prerequisites: PHY 101, CHM 111.

MEC 211 Physical Metallurgy 3 3* 4

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization, recrystallization and grain growth, age hardening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations.
Prerequisite: MEC 210.

MEC 213 Production Planning 3 3* 4

Day-to-day plant direction; forecasting, product planning and control, scheduling, dispatching, routing, and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. Drafting room layouts for planning and control.
Prerequisite: DFT 102.

MEC 217 Engineering Materials and Processes 3 3 4

An introductory study of the common materials used in engineering, such as woods, metals, concrete, plastics, etc., and the related physical testing to determine their properties and strengths. Emphasis is placed upon problem-solving and engineering application.
Prerequisites: PHY 102, MEC 102.

MEC 235 Hydraulics and Pneumatics 3 3* 4

Th basic theories of hydraulic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs.
Prerequisite: PHY 102.

MEC 237 Control Systems 2 4 4

Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance, accuracy, applications and their utilization in industrial processes.
Prerequisite: PHY 102.

MEC 1054 Gages and Templates 1 5* 3

A study designed to familiarize the student with methods and procedures of gauging using specialized gages and measuring instruments in template manufacture.
Prerequisite: MEC 1501.

MEC 1101 Machine Shop Theory and Practice 3 10* 6

An introduction to the machinist trade and the potential it holds for craftsman. Deals

primarily with the identification, care and use of basic hand tools and precision measuring instruments. Elementary layout procedures and processes of lathe, drill press, grinding (off-hand) and milling machines will be introduced both in theory and practice.
Prerequisite: None.

MEC 1102 Machine Shop Theory and Practice 3 10* 6

Advanced operations in layout tools and procedures, power sawing, drill press, surface grinder, milling machine shaper. The student will be introduced to the basic operations of the cylindral grinder and will select projects encompassing all the operations, tools and procedures thus far used and those to be stressed throughout the course.
Prerequisite: MEC 1101.

MEC 1103 Machine Shop Theory and Practice 3 10* 6

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder.
Prerequisite: MEC 1102.

MEC 1104 Machine Shop Theory and Practice 3 10* 6

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry.
Prerequisite: MEC 1103.

MEC 1113 Shop Process 2 3 3

Study of practices used in metalworking shops; introduction to how materials can be utilized, and to the processes of shaping, forming and fabricating of metals. Demonstration of the metalworking lathes, grinders, drills, milling machines, shapers, planers, saws, broachers, gear cutting machines and finishing machines. A study of the capabilities of these machines.
Prerequisite: None.

MEC 1114 Shop Processes 2 3 3

Comparison of the unit-production and mass-production systems. Casting, forging and allied processes, welding and sheet metal working processes are demonstrated and discussed. Mass-production methods are studied in relationship to precision dimensional control.
Prerequisite: MEC 1113.

MEC 1115 Treatment of Ferrous Metals 2 3 3

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, cast iron will be topics for study.
Prerequisite: None.

MEC 1116 Treatment of Non-Ferrous Metals 2 3 3

Continuation of the study of physical metallurgy. The non-ferrous metals: bearing metals, (brass, bronze, lead), light metals (aluminum and magnesium), and copper and its alloys are studied. Power metallurgy, titanium, zirconium, indium and vanadium are included in this course.
Prerequisite: MEC 1115.

MEC 1126 Heat Treating Practice 1 3* 2

A working knowledge of the methods of heat treating of small parts, springs, punches, chisels, etc. Trainees will be given the opportunity to acquaint themselves with the equipment and work in both ferrous and non-ferrous metals.
Prerequisite: None.

MEC 1501 Precision Machining 0 9* 3

Advanced operations in the use of machine shop equipment. Much emphasis will be placed on machining close tolerances.
Prerequisite: MEC 1104.

MEC 1502 Jig, Fixture and Die Making 2 9* 5

Develop understanding of principles and work of jigs and fixtures. Sketching, drawing and fabrication of simple jigs, and fixtures as projects. Basic principles of die making will be studied and applied as they relate to projects.
Prerequisite: MEC 1501.

MEC 1504 Model Making 2 8* 5

A course designed to familiarize students with procedures and techniques necessary in model making. Design and design evaluation will be applied to three-dimensional projects.
Prerequisite: MEC 1501 and MEC 1502.

MEC 1505 Mechanisms 2 3* 3

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkage, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears, and gear trains.
Prerequisites: MEC 1516, MAT 1123.

MEC 1508 Cutter Grinding 1 2* 2

Cutter Grinding is designed to familiarize the student with grinding machines, procedures, and applications as they apply to tool maintenance. Stock removal, and cutting speeds and angles will be studied.
Prerequisite: None.

MEC 1515 Manufacturing Processing 4 0 4

A thorough study of the planning of the processes and methods of manufacturing. Assembly line techniques, automation, materials, and efficiency operations will be stressed.
Prerequisite: None.

MEC 1516 Strength of Materials 2 2 3

Strength of Materials is designed to give the student an opportunity to use basic testing equipment and acquire a working relation to basic stresses and strength of materials.
Prerequisite: MAT 1123.

MEC 1540 Machine Repair 2 6* 4

A basic course in preventive maintenance and repair of metal working machines. A study will be made of basic electric and hydraulic systems commonly used. Actual repair of machines will be undertaken in the classes.
Prerequisite: PHY 1102.

MEC 1541 Machine Repair II 0 3* 1

A continuation of MEC 1540.
Prerequisite: MEC 1540.

MEC 1542 Machine Repair III 0 3* 1

A continuation of MEC 1541.
Prerequisite: MEC 1541.

MEC 1543 Machine Repair IV 0 3* 1

A continuation of MEC 1542.
Prerequisite: MEC 1542.

MEC 1560 Automatic & Semi-Automatic Machinery 3 3* 4

A study of the use and application of automatic and semi-automatic machinery. The theory and methods of modern tape and card-controlled machine tools will be included.
Prerequisite: MEC 1104.

MEC 1700 Design and Manufacturing 4 12* 10

Design and manufacturing will develop the creative ability of the student in designing and building tools and equipment for use in his career in industry. To combine the math, drafting and machining ability acquired in the first seven quarters culminating in a practical tool.
Prerequisites: MEC 1505, MEC 1508, MEC 1516.

PHYSICS (PHY)

PHY 101 Properties of Matter 3 2 4

A course in physics fundamentals. Basic divisions are systems of units, liquids at rest and in motion, elasticity of solids, liquids, and gases, heat and temperature, thermal expansion, change of phase and heat transfer. Laboratory experiments and specialized problems dealing with these topics are part of this course.
Prerequisite: MAT 101.

PHY 102 Work, Energy and Power 3 2 4

A course concentrating on work, energy and power. Basic divisions are vector quantities, systems of forces, torque and equilibrium, linear motion, force and motion, work and energy momentum, uniform circular motion and gravitation, and rotational motion. Laboratory experiments and specialized porblems dealing with these topics are part of this course.
Prerequisites: MAT 102, PHY 101.

PHY 103 Electricity 3 2 4

Basic theories of electricity, types of electricity, methods of production, and transmis-

sion and transforming of electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course.
Prerequisites: MAT 102, PHY 102.

PHY 104 Light and Sound 3 2 4

A survey of the concepts involving wave motion leads to a study of sound, its generation, transmission and detection. The principles of wave motion also serves as an introduction to a study of light, illumination and the principles involved in optical instruments. Application is stressed throughout.
Prerequisites: MAT 102, PHY 102.

PHY 106 Applied Mechanics 5 0 5

Concepts and principles of statics and dynamics. Parallel concurrent and noncurrent force systems in coplanar and noncoplanar situation. Concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and motion.
Prerequisites: MAT 102, PHY 102.

PHY 131 Matter and Energy 3 2 4

A fundamental course with a balance between theory and practice but emphasizing applications. The material to be covered is Structure of Matter; Properties of Solids, Liquids and Gases; Temperature and the Effects of Heat; Heat and Change of State; Heat Transfer; Force and Motion; Work, Energy and Power; Basic Machines; and Power Transmission.
Prerequisite: PHY 1102.

PHY 132 Electricity & Magnetism 3 2 4

A specialized course in electricity and magnetism emphasizing applications. The material to be covered is Magnetism and Electrostatics; Basic Electric Circuits; Sources and Effects of Electric Current; Electro-magnetism; Alternating Current; Generators and Motors; and Production and Distribution of Electric Power.
Prerequisite: PHY 131.

PHY 1101 Applied Science 3 2 4

An introduction to physical principles and their application in industry.
Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles.

PHY 1102 Applied Science 3 2 4

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power.
Prerequisite: PHY 1101.

POLITICAL SCIENCE (POL)

POL 201 United States Government 3 0 3

A study of government with emphasis on basic concepts, structure, powers, procedures and problems.
Prerequisite: None.

POWER MECHANICS (PME)

PME 1101 Internal Combustion Engine 3 12° 7

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engineers. Testing of engine performance; servicing and maintenance of pistons, valves, cams and camshafts, fuel and exhaust systems, cooling systems; proper lubrication; and methods of testing, diagnosing and repairing.

PME 1102 Automotive Fuel and Electrical Systems 5 12° 9

A thorough study of the fuel and electrical systems of the automobile. Fuel pumps, carburetors, fuel injectors, types of fuel systems and the characteristics of fuels are studied. The battery, starting system, generating system, accessories and wiring are taken up the latter part of the quarter, as well as the use of special tools and test equipment for fuel and electrical systems.

PME 1103 Engine Ignition Systems 3 3 4

A study of the principles and functions of the various ignition components including the transisterized ignition system. Instruction in repairing and adjusting ignition systems. Units to be studied will be ignition coils, distrbutors, spark plugs and connecting wiring plus the use of testing equipment to analyze ignition problems.

PME 1240 Advanced Automotive Electrical Systems I 5 15° 10

A thorough study of the theory and operation of various automobile electrical units and systems. Maintenance and testing procedures, diagnosis and repair of all types of electrical/ electronic components, especially the transistor circuits, found on the modern automobile.

PME 1250 Advanced Auto Fuel Systems 5 12° 9

A thorough study of the fuel systems of the automobile. Fuel pumps, carburetors, and fuel injectors. Characteristics of fuels, types of fuel systems, special tools, and testing equipment for the fuel system. Exhaust and emission controls and servicing.

PRACTICAL NURSING (PNE)

PNE 1001 Fundamentals of Health 2 0 0 2

This course is a study of total health and health habits and their effect on the individual, the family, and the environment in which they live. The study of health resources available to all persons and selected agencies that may be visited for special learning.
Prerequisite: None.

PNE 1002 Basic Sciences 6 4 0 8

This course is designed to give the student an understanding and appreciation of basic science principles and their relationship to practical nursing. The course includes study of the structure and functions of the systems of the body, the basic principles of nutrition, and selected learning of Microbiology as related to the prevention of diseases, promotion of health, and the nurse's responsibilities in protecting the patients and others from illness and/or infections.
Prerequisite: None.

PNE 1003 Fundamentals of Practical Nursing 4 8 0 8

Designed to assist the beginning Practical Nurse student in acquiring knowledge basic to the development of skills needed for safe and effective bedside nursing care.
Prerequisite: None.

PNE 1004 Clinical Experience I 0 0 21 7

Beginning experiences in a general hospital under supervision of clinical instructors with opportunity to apply principles and practice skills learned in the laboratory, and understanding of the students' role on the nursing team.
Corequisites: PSY 1101, PNE 1001, 1002, 1003.

PNE 1005 Medical-Surgical Nursing I 2 2 0 3

Designed to give the student material basic to the beginning understanding of the nursing care of patients with common problems presented by illness. Processes of illness, diagnostic tests, physiologic reaction to pain, needs of patients with long term illnesses, rehabilitation, pre and post operative needs.
Prerequisite: PNE 1001, 1002, 1003, PSY 1101.

PNE 1006 Maternity Nursing 2 2 0 3

Presentation of modern aspects of material on nursing care during antepartum, labor and postpartum periods. Care of the newborn baby and methods of teaching new mothers. Emphasis is to provide better and safer care for the expectant mother and her baby.
Prerequisites: PNE 1001, 1002, 1003; PSY 1101.

PNE 1007 2 2 0 3

Designed to develop understanding of the scope and aims of modern nursing of children, and methods of answering the needs of the hospitalized child and his parents. Nursing care of children with common disorders and advancing to the care of the more seriously ill child. Emphasis will be on the role of the student on the health team.
Prerequisites: PSY 1101, PNE 1001, 1002, 1003.

PNE 1008 Clinical Experience II 0 0 21 7

Further experience in basic areas of medical, surgical, pediatric and obstetric nursing in rotating groups. Emphasis on observation of signs and symptoms and assuming responsibility in reporting to head nurse.
Prerequisite: PNE 1004.

PNE 1009 Medical-Surgical Nursing II 4 2 0 5

Designed to develop knowledge of common disorders of body systems, the nursing care, socio-psychological implications.
Prerequisite: PNE 1005.

PNE 1011 Clinical Experience III 0 0 21 7

Continued experience in medical-surgical pediatric and maternity nursing with emphasis on the role as an assistant to the professional nurse in caring for the seriously ill patient in rotating experience.
Prerequisite: PNE 1008.

PNE 1012 Advanced Medical-Surgical Nursing III 4 0 0 4

Continue the study of the nursing needs of the more seriously ill or aging patients with disorders affecting the body systems.
Prerequisite: PNE 1009.

PNE 1013 Mental Health 3 0 0 3

An introduction of mental, emotional and physical reactions caused by illness and hospitalization. Emphasis is placed on the Practical Nurse's role in the care of mentally or emotionally disturbed patient.
Prerequisite: PSY 1101.

PNE 1014 Vocational Adjustment 2 2 0 3

Designed to present further nursing ethics, medical-legal aspects of Practical Nursing, a study of the nursing organizations and the study of work opportunities, and the obligations and responsibilities of the Licensed Practical Nurse as a person, a worker, and a citizen.
Prerequisite: Satisfactory completion of PNE up to this point.

PSYCHOLOGY (PSY)

PSY 108 Psychology of Communications 3 0 3

An examination of basic communications psychology. The course gives the student a rudimentary understanding of some of the basic principles of perception, determinants of attention, information theory, memory, and learning. Emphasis is placed on applying these principles to the visual communications field and on showing the student how best to convey information to identified audiences.

PSY 201 General Psychology 3 0 3

An introduction to the science of behavior including the study of heredity, maturation, learning and remembering, perception, motivation, environment and normal/abnormal personality.

PSY 206 Applied Psychology 3 0 3

A survey of psychological thinking on the topics of heredity, environment, maturation, learning, motivation, emotion, perception, and personality (normal and abnormal). Emphasis is placed on the application of knowledge to work and life situations.
Prerequisite: None.

PSY 213 Advanced Psychology 3 0 3

An expansion of the topics surveyed in Applied Psychology, PSY 206.
Prerequisite PSY 206.

PSY 221 Psychology of Color 3 0 3

A study of color, the conscious and subconscious response to combination of colors as applied to visual communications.
Prerequisite: None.

PSY 1101 Human Relations 3 0 3

A study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships with the work situation.
Prerequisite: None.

PSY 1112 Personality Development 3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

SOCIAL SCIENCES

SSC 201 Social Science 3 0 3

An investigation into the basic concepts of sociology. Topics considered are sociological methods, the nature and meaning of culture, personality and socialization, role and status, social control, groups and associations, institutions, and the family. Course emphasis is on application of the principles of sociology to the understanding of life and work situations.
Prerequisite: None.

SSC 202 Social Science 3 0 3

An extension of the student's knowledge into the area of sociology, the course includes considerations of social class, social mobility, social processes, social power, race relations, collective behavior, population, community problems, social change, and social movements. The course emphasizes a nonscientific but in-depth analysis of some of the more complex topics in sociology.

SSC 203 Environmental Studies 3 0 3

A study of environmental problems caused by the impact of man and technology upon the natural resources of the earth. Basic ecology and ecosystems are introduced at the beginning. Various causes of pollution are studied and possible solutions discussed. The social, economic and political impact of environmental problems is stressed.

SSC 204 Families in American Culture 3 0 3

Study of the family in American culture, changing patterns in family roles, the influence of socio-economic status on family relationships, factors, associated with cultural deprivation, and the effects on children in such families.

SSC 205 American Institutions 3 0 3

A study of the effect of American social, economic, and political institutions upon the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage.
Prerequisite: None.

SSC 206 The Family: A Cross-Cultural Survey 3 0 3

Study of the family as a social unit, with primary focus on the influence of family relationships during infancy and childhood. Historical patterns and the evolutiion of family roles in various types of cultures provide opportunities to analyze and interpret the influence of the culture and the family in relation to the larger society.

SSC 207 The Child and Community Services 3 0 3

Study of the community agencies concerned with the physical and mental health of children and their families. Analysis of the child needs which can be met through community planning, with identification of local, state, and national resources.

TRANSPORTATION MAINTENANCE TECHNOLOGY

PME 101 Internal Combustion Engine 2 6 4

Development of a thorough knowledge and ability in using, maintaining, and storing the various hand tools and measuring devices needed in engine repair work. Study of the construction and operation of components of internal combustion engines. Testing of engine performances servicing and maintenance of pistons, valves, camshafts, fuel and exahust systems, cooling systems; proper lubrication; and methods of testing.
Prerequisite: None.

PME 102 Automotive Ignition Systems 3 6 5

The study of different designs of ignition systems and the different tune-up procedures for these systems. Each component of each system is studied in depth. The proper use of testing equipment of the ignition system.
Prerequisite: None.

PME 103 Automotive Electrical Systems 3 3 4

A thorough study of the automotive electrical system. Included are the battery, cranking mechanism, generator (ALC & DLC), ignition, accessories and wiring. Proper testing procedures with the proper equipment is also studied.

PME 111 Engine Rebuilding 2 6 4

Designed to allow the automotive student to become familiar with milling, refitting, and refacing procedures used in engine overhauling, and proper overhaul procedures.

PME 112 Automotive Fuel Systems 3 6 5

Study of the characteristics of fuels, types of fuel systems, carburetor fundamentals and the use of special tools and testing equipment for the fuel system.
Prerequisite: None.

PME 121 Braking Systems 2 3 3

A complete study of various braking systems employed on automobiles and lightweight truck. Emphasis is placed on how they operate, proper adjustment, and repair.
Prerequisite: PHY 1102.

PME 123 Automotive Chassis and Suspension Systems 3 3 4

Principles and functions of the components of automotive chassis. Practical job instruction in adjusting and repairing of suspension, and steering systems. Units to be studied will be shock absorbers, springs, steering systems, steering linkage, and front end and alignment.
Prerequisite: PME 102.

PME 124 Automotive Power Train Systems 3 9 6

Principles and functions of automotive power train systems; clutches, transmission gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing, and repair.
Prerequisites: PHY 1102, PME 123.

PME 201 Motor Vehicle Laws and Regulations 3 0 3

In order to assure a complete knowledge of the latest laws and regulations governing the automobile operation and automotive repair business operation this course will delve deeply into such laws and regulations.

PME 202 Emission Control Systems 5 6 7

A course designed to give each student a complete and deep knowledge of today's emission control systems including testing and overhaul of all major parts. The proper use of emission level testing equipment will also be covered.

PME 203 Advanced Ignition System 1 3 2

This is a continuation of PME 102.

PME 204 V. W. Engines 0 6 2

This course is for those students with an understanding of the basic gasoline engine and have a desire for further understanding and experience on the V. W. Engine. The course will cover removal, installation, testing, overhaul, and modification of the V. W. engine.

PME 205 Dis Brakes 0 6 2

In order to be completely up-to-date on the complex braking systems of today the automotive student needs a complete understanding of the latest disc brakes. This course is to give the student time in the lab to experiment and study all phases of disc brakes. With instructor guidance, each student on completion of this course will be able to test and overhaul disc brakes as found on the cars of today.

PME 206 Alternator and Starter Rebuilding 1 3 2

This course, through class and laboratory experiences, give the student an understanding of design and overhaul procedures on the alternator and starter systems.

PME 207 Engine Modification and Advanced Engine Designs 0 6 2

Designed to give the student who has mastered the standard gasoline engine a chance to further his knowledge and technique of specific engine modification for more efficient engine performance.

PME 208 Wankel Engine 2 6 4

A study and comparison of the standard (reciprocating) engine and the Wankel (rotary) engine. Through class participation and practical shop practice each student will achieve a working knowledge of such points as trouble shooting, testing, adjustment, and major overhaul of the Wankel engine.

PME 209 Foreign Car Engines 0 6 2

In this course the students will work with all types of foreign car engines ranging from the simple through the more complex and expensive. The emphasis will be placed on design and construction differences which exist between foreign and domestic engines.

PME 210 Instruments, Gauges, and Electrical Accessories 0 6 2

This course will give each student a deeper understanding of the complex electrical systems in todays automobile. Electrical accessories studied during this time will be power seats, power windows, windshield wipers and washers, engine gauges, and instrument testing and repair.

PME 215 The Diesel Engine 2 6 4

A course designed for the student with a working knowledge of the gasoline engine. This course expands his potential as a mechanic by giving him an understanding of the basic principles for maintenance and repair of diesel engines.

PME 223 Front Suspension, Alignment and Power Steering 1 6 3

Types and designs of front ends are studied and a great deal of practice in the lab on alignment procedures and equipment, front suspension overhaul, and power steering maintenance and overhaul.

PME 224 Advanced Automatic Transmissions I 3 6 5

This course is designed to provide a measure of depth in the understanding of automatic transmissions. Instruction includes classroom study, demonstrations, and student participation in disassembly, reassembly, and testing of selected transmissions. Special emphasis is placed on principles, function, construction, operation, servicing and "trouble-shooting" procedures and repair of various types of automatic transmissions.

PME 240 Diagnosis and Testing I 5 6 7

A thorough study of the theory and operation of various automobile electrical units and systems. Maintenance and testing procedures, diagnosis and repair of all types of electrical/electronic components, especially the transistor circuits, found on the modern automobile.

PME 241 Diagnosis and Testing II 5 6 7

A continuation of PME 240.

PME 250 Advanced Auto Fuel Systems 5 6 7

A thorough study of the fuel systems of the automobile. Fuel pumps, carburetors, and fuel injectors. Characteristics of fuels, types, of fuel systems, special tools, and testing equipment for the fuel system. Exhaust and emission controls and servicing.

PME 251 Coorperative Mechanics Training 3

Supervised on the job training coordinated and approved by the instructor. May be substituted for similar automotive lab experiences in selected courses. Evaluated as 100 hours of related work for 3 hours laboratory credit per quarter.

PME 1125 Automotive Servicing 3 9 6

Emphasis is on the shop procedures necessary in determining the nature of troubles developed in the various component systems of the automobile. Troubleshooting of automotive systems, providing a full range of experiences in testing, adjusting, repairing and replacing.
Prerequisites: PME 123, PME 121, AHR 1101.

WELDING (WLD)

WLD 1101 Basic Gas & Electric Welding 1 3 2

Welding demonstrations by the instructor and practice by students in the welding shop. Safe and correct methods of assembling and operating the welding equipment. Practice will be given for surface welding; brazing, silver-soldering, and flame-cutting methods applicable to mechanical repair work using gas welding. Practice in basic electric welding will be given as it applies to simple construction and mechanical repair.
Prerequisite: None.

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ADMINISTRATIVE OFFICERS

William E. Taylor .... President

B.S. Eastern Kentucky University, Richmond, Kentucky; M.Ed. University of North Carolina, Greensboro. Additional study at N. C. State University and University of North Carolina-Chapel Hill.

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B.S. Business Administration; East Carolina University; additional study at University of Nebraska.

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B.A. English, University of North Carolina-Chapel Hill; M.E., Administration, University of North Carolina-Chapel Hill.

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A.B. Speech, Asbury College; M.Ed., Guidance and Counseling, University of North Carolina-Chapel Hill; additional study at Asbury Theological Seminary, Duke University, North Carolina State University, Iowa University, and California State College at Los Angeles.

Miles L. Eckard .... Dean of Instruction

B.S. Math, Appalachian State University; MAT Math and Science, University of North Carolina-Chapel Hill; Ed.D. Community College Administration, North Carolina State University; additional study at East Tennessee State University, Duke University and Texas A&M University.

Terrence Hanner .... Registrar

B.S. History, Duke University; additional study at East Carolina University and IBM training schools.

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Monroe McVey .... Director, Adult Education

B.A. History, Elon College; additional study at Virginia Commonwealth University and University of North Carolina-Greensboro

Jack O'Kelley .... Director, Extension

B.S. Winston-Salem State University; M.S. A& T University.

Governor Robert W. Scott .... Special Consultant for Development

F. Dave Turnage .... Director, Occupational Education

B.S. Mechanical Engineering, N .C.State University; Professional Degree, N. C. State University

G. Dale Vaughn .... Director, Evening Programs

B.Ed. Industrial Arts, Eastern Illinois University; M.A., Industrial Education, Ohio State University; additional study at University of North Carolina-Greensboro and North Carolina State University.

COUNSELORS

Mrs. Ella Ray Chacey .... Admissions Officer

B.S. Commerce, University of Mississippi; M.Ed., University of North Carolina-Chapel Hill; additional study at University of North Carolina-Chapel Hill. Graduate certification in Guidance and Counseling from N. C. State Dept. of Instruction

Richard E. Davis .... Financial Aid Officer

B.A., Political Science and Comparative Literature, University of N. C.-Chapel Hill; M.Ed., Administration and Guidance Services, University of N.C.-Chapel Hill; additional study at N. C. State University, Appalachian State University, Tulane University, Graduate certification by N. C. State Dept. of Public Instruction as Principal, Counselor, teacher in sciences, social sciences, and English.

Joseph H. Fryar .... Student Activities Coordinator

B.A., French, N. C. Central University, Durham, N. C.; M.A., French, N. C. Central University.

Mrs. Joann McIntyre .... Job Placement

B.S., University of North Carolina, Greensboro
M.Ed., Guidance and
Counseling, UNC-G

Mrs. Louise Greer

B.Ed., Duquesne University
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Mr. Herman Satterfield	Maintenance
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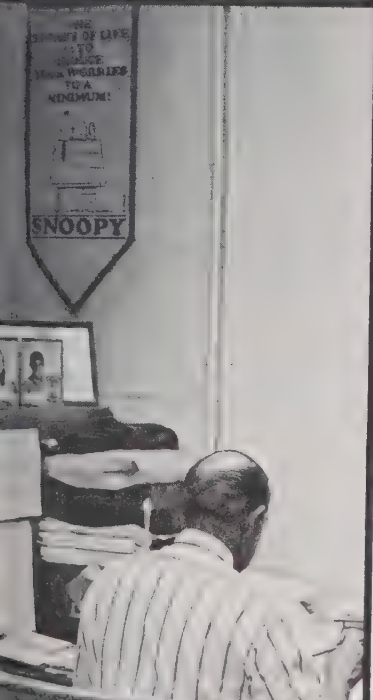
Miss Martha Woods	Office Clerk

THE FACULTY



APPLIED ARTS

Mr. Harry Palmer .... Division Chairman
Department Head
Commercial Art

B.A., Art, Richmond Professional Institute; additional study at Georgia State University, Atlanta, Ga., and University of North Carolina-Chapel Hill.

Miss Frances Durant .... Commercial Art

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Mr. Wayne Feamster .... Department Head
Audio-Visual Technology

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Mr. Leonard Miller .... Department Head
Technical Illustration

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BUSINESS TECHNOLOGIES

Mr. Charles Lowry .... Division Chairman

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Secretarial Department

B.A., Business Education, Elon College; additional study at the University of North Carolina-Greensboro.

Mrs. Ruth Brookshire .... Secretarial Department

B.S., Business Administration, East Carolina University; A.A., Business Education, Emmanuel College

Mr. Roy Campbell .... Business Administration

B.A., Business Administration, Elon College; M.S., Business Management, Virginia Commonwealth University

Mr. Vernon Cheek .... Department Head
Business Administration

B.S., Business Administration, Elon College; additional study at the University of North Carolina-Chapel Hill

Mr. Gil Dodson .... Department Head
Data Processing

B.A., Business Administration, Elon College C.D.P., Data Processing Management Association; additional study at North Carolina State University.

Mr. Julius Kimbro .... Data Processing

B.S., Mathematics, North Carolina State University.

Mr. Tom Long .... Business Administration

B.S., Business Administration, University of North Carolina-Chapel Hill; J.D., Duke University

Mrs. Jean McMillan .... Secretarial Department

B.S., Secretarial Administration, University of North Carolina-Greensboro; additional study at the University of North Carolina-Greensboro and North Carolina State University.

Mrs. Wanda Palmer .... Secretarial Department

B.A., English, Carson-Newman College, Jefferson City, Tennessee; additional study at the University of North Carolina-Greensboro.

Mrs. Ruth Wade .... Secretarial Department

B.S., Business Education, North Carolina Central University; M.Ed., Business Education, University of North Carolina-Greensboro.

ENGINEERING TECHNOLOGIES

Mr. Jerry Harris .... Division Chairman

A.A., Agriculture, N.E. Oklahoma A & M College; B.S., Animal Science, Oklahoma State University; M.S., Biochemistry & Nutrition, North Carolina State University; additional study at Duke University and the University of North Carolina-Chapel Hill.

Mr. Pedro Alomia .... Department Head
Air Conditioning and
Refrigeration Technology

Inter-American Trade Scholarship; additional study at the University of North Carolina-Greensboro, North Carolina State, and the Technical Institute of Alamance. Twelve years experience as an air conditioning and refrigeration contractor and repairman.

Miss Cynthia Daugherty .... Chemistry

B.S., Chemistry, Radford College, Radford, Va.; M.S., Chemistry, University of Tennessee.

Mr. James Peeples .... Department Head
Electronics Engineering
Technology

A.A.S., Capitol Institute of Technology; additional study at North Carolina State University.

Mr. Paul Scheetz . . . . Drafting and Design Technology

B.S. in Voc. Ind. Education from North Carolina State University; additional study at North Carolina State University.

Mr. John Stewart . . . . Department Head Drafting and Design Technology

A.S., Drafting, Indiana Institute of Technology; additional study at Purdue University, N. C. State University, University of N. C.-Greensboro, University of Illinois, Vocational Teacher Institute, and St. Francis College.

Mr. Ralph Stockard . . . . Electronics

B.S.E.E., N. C. State University; additional study at N. C. State University and the University of N. C.-Chapel Hill.

HUMAN SERVICES

Mrs. Ruth Elzey . . . . Division Chairman

B.A., Nursing, Barrington College, Barrington, Rhode Island; R.N., Sturdy Memorial Hospital School of Nursing.

Mrs. Margaret Hooper . . . . Dental Assisting

Diploma in Dental Assisting from the Technical Institute of Alamance.

Mrs. Mildred Lynch . . . . Department Head Dental Assisting

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B.A., Sociology, North Carolina State University; M.Ed., Guidance and Personnel Services, North Carolina State University; additional study at North Carolina State University and University of North Carolina-Greensboro. Graduate certification by North Carolina Department of Public Instruction in Counseling.

Mrs. Florence Pate . . . . Practical Nursing

R.N., Presbyterian-University Pennsylvania Hospital School of Nursing; additional study at Elon College.

MECHANICAL OCCUPATIONS

M. Glenn Klutz .... Division Chairman

B.S., Math Education and Electrical Engineering, N. C. State University; M.A., Guidance and Student Personnel, University of Alabama; additional study at N. C. State University and University of N. C.-Greensboro.

Mr. James Newbold .... Automotive Mechanics

Mars Hill College; additional training with General Motors and at Rockingham Community College. Twenty-three years experience as auto mechanic.

Mr. David Payne .... Air Conditioning and Refrigeration

Diploma, Air Conditioning, Technical Institute of Alamance; Diploma, Auto Mechanics, Technical Institute of Alamance; additional study at Westinghouse Factory school and Elon College.

Mr. Willis Rethaford .... Department Head Auto Mechanics

Diploma, Auto Mechanics, Technical Institute of Alamance; additional study at North Carolina State University, Autolite, General Motors, American Motors, Perfect Circle, and Mark IV. Eight years experience as auto mechanic.

Mr. Arthur Sykes .... Department Head Machinist Trade

Certificate as Machinist from Western Electric Company; Fifteen years experience as machinist.

RELATED STUDIES

Mr. James Swinney .... Division Chairman

B.E.E., North Carolina State University;

additional study at Harvard University, George Washington University, North Carolina State University and the University of North Carolina-Greensboro

Mr. Laurent Changuion .... English

Th.B., Theology/Christian Education, Holmes Theological Seminary; B.A. English, Elon College; additional study at Elon College.

Mrs. Betty Jo Maghan .... Department Head
Developmental Studies
English
Social Sciences

B.A., English and Social Studies, Wake Forest; M.A., English, Appalachian State University; additional study at University of North Carolina-Chapel Hill and Greensboro.

Mr. Tad Martin .... Mathematics

B.S., Math, East Carolina University.

Mrs. Kaye Maves .... English

B.M. in Ed., Centenary College of La.; M.A., English, University of Oregon.

Miss Rebecca Smith .... English

B.A., English, Berea College, Berea, Kentucky; additional study at University of North Carolina-Chapel Hill.

Mr. Rudy Smith .... Department Head
Mathematics Department

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Mr. Joe Canada .... Mathematics

A.B., Mathematics, Catawba College.

LEARNING LAB

Mrs. Pearl Lee .... Coordinator

B.S., Elementary Education, Winston-Salem University; M.Ed., Speech Pathology and Audiology, University of North Carolina-Greensboro; additional study at Teachers College, Columbia University.

Mr. Robert Graham .... Evening Coordinator

B.A., Religion, Elon College; M.Ed. Industrial Education, North Carolina State University; additional study at the University of North Carolina-Greensboro, and Appalachian State University.

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ALPHA NUMBER

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ST-COUNTY

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PHY-MED

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80
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22-23
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7-21 LAST NAME
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42-44 JR-SR-III, ETC.

45-53 SOCIAL SECURITY NUMBER

54
1 ☐ MALE
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CITY-COUNTY ____________________ STATE ____________

61
1 ☐ WHITE
2 ☐ BLACK
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RACE

NORTH CAROLINA RESIDENT
☐ YES
☐ NO

NORTH CAROLINA COUNTY OR STATE OF RESIDENCY ____________________

PERMANENT ADDRESS IS THE ADDRESS OF YOUR PARENTS, GUARDIAN, OR SOMEONE WHO WILL KNOW HOW TO CONTACT YOU AFTER YOU LEAVE TIA.

LOCAL ADDRESS REFERS TO A TEMPORARY ADDRESS YOU WILL BE USING ONLY WHILE AT TIA.

IF YOUR PERMANENT ADDRESS AND LOCAL ADDRESS ARE THE SAME, PLEASE PRINT IT IN BOTH PLACES.

24-43 PERMANENT ADDRESS STREET & NUMBER
44-63 PERMANENT CITY & STATE
64-68 PERM. ZIP

NEXT OF KIN ____________________ RELATIONSHIP ____________________

69-75 PHONE PERM.

ADDRESS OF NEXT OF KIN ____________________ ____________________
(IF DIFFERENT FROM PERMANENT ADDRESS) STREET & NUMBER CITY & STATE ZIP PHONE

24-43 LOCAL ADDRESS STREET & NUMBER
44-63 LOCAL CITY & STATE
64-68 LOCAL ZIP
69-75 PHONE LOCAL

LAST HIGH SCHOOL ATTENDED

HIGH SCHOOL NAME ____________ HIGH SCHOOL CITY & STATE ____________ HIGH SCHOOL ZIP ____________

DID YOU (OR WILL YOU) GRADUATE? YES ____ YEAR ____________
NO ____ HIGHEST GRADE COMP. ____________
EQUIVALENCY CERTIFICATE ____________

SCHOOL USE ONLY
DO NOT WRITE IN
THIS COLUMN

24-27 ☐☐☐☐
CURR. CODE

28-37 ☐☐☐☐☐☐☐☐☐☐
ADVISOR

38-44 ☐☐☐☐☐☐☐
HIGH SCHOOL CODE

45-46 ☐☐
LAST YEAR ATTENDED

47-50 ☐☐☐☐
STANDING

51-54 ☐☐☐☐
IN CLASS OF

55-61 ☐☐☐☐☐☐☐
COLLEGE CODE

CLASSIF
1-NF
2-RF
3-SO

62-65 ☐☐☐☐
BEGAN STOPPED

66 ☐

67 ☐
ATTEND
1-DAY
2-NIGHT

68-70 ☐☐☐
TERM

71 ☐
EMPLOY
1-UN
2-PT
3-PT

80 4
CODE

SCHOOLS OR COLLEGES ATTENDED AFTER LEAVING HIGH SCHOOL, IF ANY

YEAR ATTENDED
FROM TO

____ ____ ____ ____ 19____ 19____
LAST COLLEGE NAME COLLEGE CITY AND STATE ZIP

OTHERS

____ ____ ____ 19____ 19____

____ ____ ____ 19____ 19____

HAVE YOU EVER ATTENDED TIA BEFORE? ____ YES ____ NO LAST TERM ____ ____ PROGRAM ____
QUARTER YEAR

IN WHAT PROGRAM OR FIELD OF STUDY DO YOU PLAN TO ENROLL? ____

DO YOU PLAN TO ATTEND (____ , ____) CLASSES? WHICH QUARTER DO YOU PLAN TO ENROLL? ____ SUMMER ____ WINTER ____ FALL ____ SPRING
DAY EVENING

WILL YOU BE EMPLOYED WHILE ATTENDING TIA?
1 UNEMPLOYED ____
2 PART-TIME ____ EMPLOYER ____ PHONE NUMBER ____
3 FULL-TIME ____ EMPLOYER'S ADDRESS ____

____

FINANCIAL AID

WHAT TYPES OF FINANCIAL ASSISTANCE WILL YOU HAVE WHILE ATTENDING TIA?

72 ☐ MANPOWER DEV. & TRAINING
74 ☐ SOCIAL SECURITY BENEFITS
76 ☐ VETERAN'S BENEFITS
78 ☐ OTHER ____
73 ☐ SCHOLARSHIP ____ NAME OF
75 ☐ VOCATIONAL REHABILITATION
77 ☐ WORK STUDY
79 ☐ NONE

DO YOU BELIEVE THAT YOU NEED AND QUALIFY FOR OTHER FINANCIAL AID? IF SO, PLEASE CONTACT FINANCIAL AID OFFICER.

HEALTH INFORMATION

Rate your general health as ☐ Excellent, ☐ Good, ☐ Fair, or ☐ Poor.

Do you have any physical handicaps or requirements that interfere with your studies or work that you might assume, or have you had or do you now have

	YES	NO		YES	NO		YES	NO
Rheumatic Fever	____	____	High Blood Pressure	____	____	Do you use Crutches or Wheelchair?	____	____
Heart Disease	____	____	Speech Disorders	____	____	Psychiatric Problems	____	____
Diabetes	____	____	Hearing Problems	____	____	Other (Explain) ____		
Epilepsy	____	____	Eye (sight) Problems	____	____	____		

NAME AND ADDRESS OF YOUR REGULAR PHYSICIAN: ____ ____
Telephone Number
____
____

IN CASE OF AN EMERGENCY, PERMISSION IS GRANTED TO CALL A PHYSICIAN OTHER THAN THE ABOVE NAMED ____ YES ____ NO

Are you at present receiving medical care of any sort? ____ If so, please describe and give dates: ____

____

I understand that I am responsible for having official transcripts of my previous college records, if any, sent directly to the Admissions Officer, Technical Instit of Alamance, 411 Camp Road, Burlington, North Carolina 27215. I certify that I have listed above all schools or colleges attended after high school, if any.

Date of Application ____ Applicant's Signature ____

IF MARRIED, PRINT NAME BEFORE MARRIAGE HERE: ____

APPLIED ARTS
  - Audiovisual Technology
  - Commercial Art and Advertising Design
  - Technical Illustration

BUSINESS TECHNOLOGIES
  - Business Administration
  - Business Data Processing
  - General Office Technology
  - Medical Secretary
  - Scientific Data Processing
  - Technical Secretary

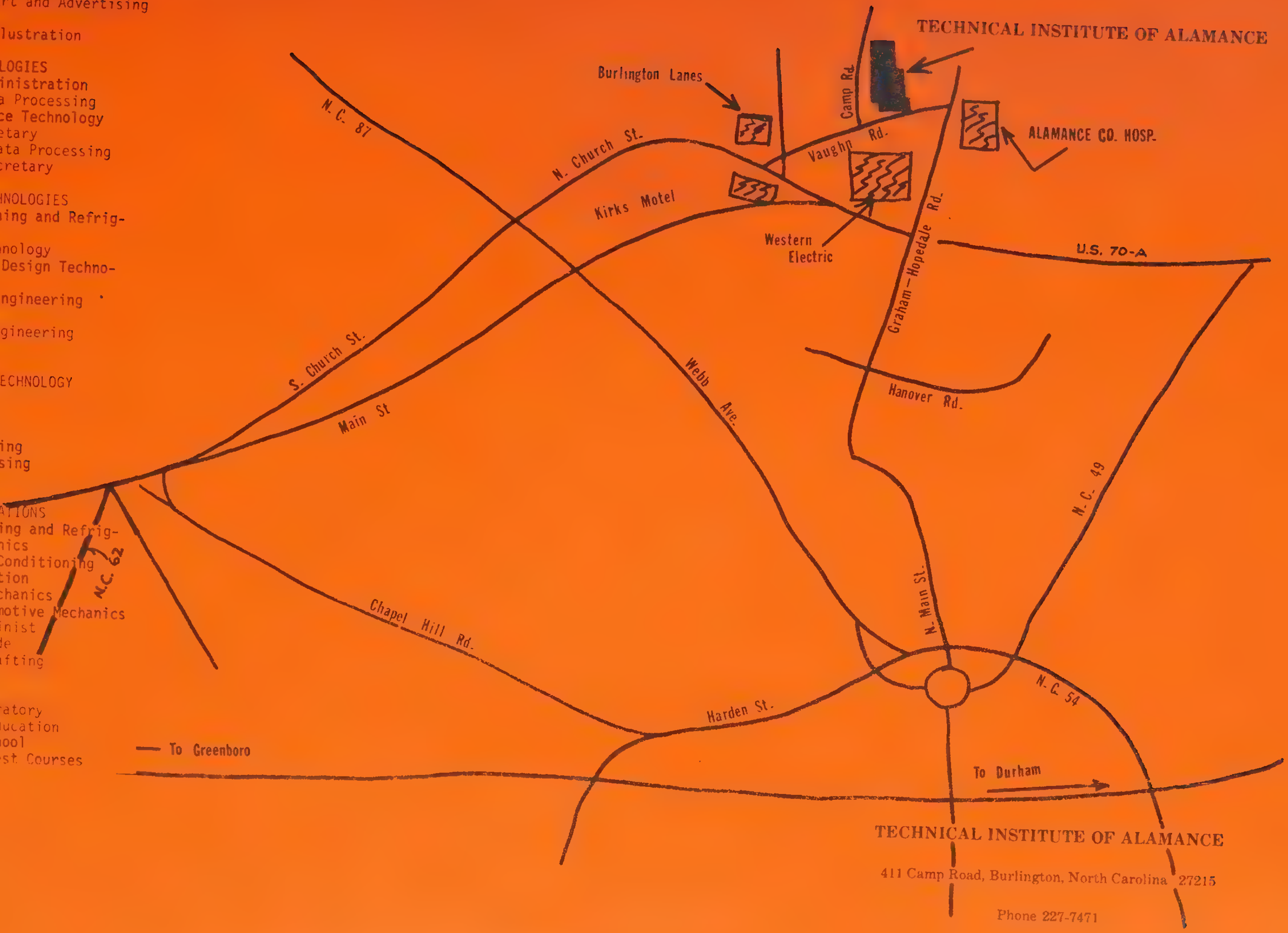
ENGINEERING TECHNOLOGIES
  - Air Conditioning and Refrigeration
  - Chemical Technology
  - Drafting and Design Technology
  - Electronics Engineering Technology
  - Industrial Engineering Technology

PUBLIC SERVICE TECHNOLOGY
  - Fire Science

HUMAN SERVICES
  - Dental Assisting
  - Practical Nursing
  - Child Care

MECHANICAL OCCUPATIONS
  - Air Conditioning and Refrigeration Mechanics
  - Advanced Air Conditioning and Refrigeration
  - Automotive Mechanics
  - Advanced Automotive Mechanics
  - Advanced Machinist
  - Machinist Trade
  - Mechanical Drafting

ADULT EDUCATION
  - Learning Laboratory
  - Adult Basic Education
  - Adult High School
  - General Interest Courses


TECHNICAL INSTITUTE OF ALAMANCE
Burlington Lanes
Camp Rd.
ALAMANCE CO. HOSP.
Vaughn Rd.
N. C. 87
N. Church St.
Kirks Motel
Western Electric
Graham—Hopedale Rd.
U.S. 70-A
S. Church St.
Webb Ave.
Hanover Rd.
Main St
N. C. 49
N.C. 62
Chapel Hill Rd.
N. Main St.
N. C. 54
Harden St.
To Greenboro
To Durham

TECHNICAL INSTITUTE OF ALAMANCE

411 Camp Road, Burlington, North Carolina 27215

Phone 227-7471

the
technical
institute
of alamance

411 Camp Road/Burlington, N. C. 27215

LIBRARY RATE

University of Chapel Hill
Chapel Hill, N.C.
27514

TECHNICAL INSTITUTE OF ALAMANCE

General Catalog

1975-77

Mailing Address	Technical Institute of Alamance 411 Camp Road Burlington, North Carolina 27215
Telephone Number	227-7471 Area Code 919

For prompt handling, inquiries should be addressed to the offices indicated below:

General Information	President
Business Affairs	Business Manager
Admissions Student Information Financial Aid Counseling Services	Director of Student Personnel
Vocational-Technical Programs	Director of Occupational Education
General Adult Education	Director of General Adult Education

Visitors are always welcome at the Technical Institute of Alamance. The Administrative Offices are open Monday through Thursday from 8:00 a.m. to 10:00 p.m. and Friday from 8:00 a.m. to 5:00 p.m. Visitors desiring interviews with members of the staff are urged to make appointments in advance.

ADDITION TO THE TIA 1974-76 GENERAL CATALOG
(Errata Sheet)

Page 52
DIPLOMA PROGRAMS

Delete Item Number 2 (complete paragraph) and insert the following correction:

2. An applicant must be a high school graduate or have its equivalent. High School Equivalency Certificates which meet the standards of the N. C. Board of Education are accepted to meet the high school graduate requirements. Exceptions to this may be made in certain vocational programs based on maturity, age, and the ability of the applicant.

GENERAL CATALOG

1975-1977

chnical Institute of Alamance Burlington, North Carolina

TECHNICAL INSTITUTE OF ALAMANCE

ACADEMIC CALENDAR*

Fall Quarter 1974 through Summer Quarter 1975

FALL QUARTER 1974

September	3	New Student Orientation
September	4	Registration
September	5	Classes Begin
September	11	Last Day to Add a Course
November	20	Classes End
November	28, 29	Thanksgiving Holidays

WINTER QUARTER 1975

December	2	Registration
December	3	Classes Begin
December	9	Last Day to Add a Course
December	23-31	Christmas Holidays
January	1	New Year's Holiday
February	27	Classes End

SPRING QUARTER 1975

March	4	Registration
March	5	Classes Begin
March	11	Last Day to Add a Course
March	28-31	Easter Holidays
May	22	Classes End

SUMMER QUARTER 1975

May	27	Registration
May	28	Classes Begin
June	3	Last Day to Add a Course
July	4	Independence Day Holiday
August	13	Classes End
August	17	Graduation
August	18-29	Summer Vacation

*Subject to change without notification

TECHNICAL INSTITUTE OF ALAMANCE

ACADEMIC CALENDAR*

Fall Quarter 1975 through Summer Quarter 1976

FALL QUARTER 1975

September	5	New Student Orientation
September	8	Registration
September	9	Classes Begin
September	15	Last Day to Add a Course
November	24	Classes End
November	27, 28	Thanksgiving Holidays

WINTER QUARTER 1975

December	1	Registration
December	2	Classes Begin
December	8	Last Day to Add a Course
December	24-31	Christmas Holidays
January	1, 2	New Year's Holidays
February	26	Classes End

SPRING QUARTER 1976

March	2	Registration
March	3	Classes Begin
March	9	Last Day to Add a Course
April	16-19	Easter Holidays
May	20	Classes End

SUMMER QUARTER 1976

May	25	Registration
May	26	Classes Begin
June	1	Last Day to Add a Course
June	28-July 2	Summer Vacation
July	5	Independence Day Holiday
August	18	Classes End
August	22	Graduation

* Subject to change without notification

TECHNICAL INSTITUTE OF ALAMANCE

ACADEMIC CALENDAR*

Fall Quarter 1976 through Summer Quarter 1977

FALL QUARTER 1976

September	3	New Student Orientation
September	7	Registration
September	8	Classes Begin
September	14	Last Day to Add a Course
November	23	Classes End
November	25, 26	Thanksgiving Holidays

WINTER QUARTER 1976

November	30	Registration
December	1	Classes Begin
December	7	Last Day to Add a Course
December	23-31	Christmas Holidays
February	24	Classes End

SPRING QUARTER 1977

March	1	Registration
March	2	Classes Begin
March	8	Last Day to Add a Course
April	8,11	Easter Holidays
May	19	Classes End

SUMMER QUARTER 1977

May	24	Registration
May	25	Classes Begin
May	31	Last Day to Add a Course
June	27-July 1	Summer Vacation
July	4, 5	Independence Day Holidays
August	18	Classes End
August	21	Graduation

*Subject to change without notification.

TECHNICAL INSTITUTE OF ALAMANCE

ACADEMIC CALENDAR*

Fall Quarter 1977 through Summer Quarter 1978

FALL QUARTER 1977

September	2	New Student Orientation
September	6	Registration
September	7	Classes Begin
September	13	Last Day to Add a Course
November	22	Classes End
November	24, 25	Thanksgiving Holidays

WINTER QUARTER 1977

November	29	Registration
November	30	Classes Begin
December	6	Last Day to Add a Course
December	26-30	Christmas Holidays
February	21	Classes End

SPRING QUARTER 1978

February	27	Registration
February	28	Classes Begin
March	6	Last Day to Add a Course
March	24, 27	Easter Holidays
May	17	Classes End

SUMMER QUARTER 1978

May	22	Registration
May	23	Classes Begin
May	29	Last Day to Add a Course
June	26-July 7	Summer Vacation
August	21	Classes End
August	27	Graduation

*Subject to change without notification.

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The Legal and Corporate Name of the Institution is:

"TECHNICAL INSTITUTE OF ALAMANCE"

The provisions of this publication are not to be regarded as an irrevocable contract between the student and the Technical Institute of Alamance. The Institute reserves the right to make changes in the regulations, courses, fees, and other matters of policy and procedure as and when deemed necessary. The Institute further reserves the right, at any time, to request the student to withdraw when it considers such action to be in the best interest of the institution.

THE INSTITUTE

The Technical Institute of Alamance was established in 1959. Its establishment was part of a state-wide system known as Industrial Education Centers. Through the cooperative efforts of the State Department of Trade and Industrial Education and the school systems of Alamance County and Burlington, the Burlington-Alamance County Industrial Education Center was begun.

The need for and the development of the Institute has been centered on the principle of responsiveness to changing needs and conditions in the area. The expansion of the industrial and technological era in the State has created many new employment opportunities for technically trained personnel. In addition, the right of every individual to have an educational opportunity to develop according to one's potential has been recognized.

The initiation of a state-wide system of Industrial Education Centers was begun in 1957 by the allocation of funds by the General Assembly. In 1959, the General Assembly officially designated this type of vocational school as an Industrial Education Center.

Under legislation enacted in 1963, administration of the Industrial Education Center was transferred to the State Board of Education, Department of Community Colleges. The local control of the Institution was vested in a board of trustees by the new legislation.

In continuance of the principle of responsiveness to changing needs and conditions in the area, the Board of Trustees applied to the State Board of Education through the State Department of Community Colleges to become a Technical Institute. The State Board of Education approved the change in status to a Technical Institute in January, 1964. Along with the approval, authority was granted to award the degree, Associate in Applied Science Degree (A.A.S.), in approved programs. In the spring of 1964, the Board of Trustees changed the name of the Institute to Technical Institute of Alamance.

In November of 1966 the Board of Trustees of the Technical Institute of Alamance authorized an institutional self-study to assist in measuring the effectiveness of the educational program of the school. The Technical Institute of Alamance was accredited by the Southern Association of Colleges and Schools in December, 1969, as a result of this self-study and review by a visiting committee from the Association.

In September of 1971, Governor Robert Scott and Mrs. Elizabeth Carrington announced the donation of 48 acres of land to be used for the site of a new and expanded facility for the Institute. With the support of the community, the new campus should soon be a reality.

Future development of the Technical Institute of Alamance will, as in the past, be constantly responsive to the educational and occupational as well as culturally oriented needs of the community.

PURPOSE

The purpose of the Technical Institute of Alamance shall be to:

> Be responsive to the varied educational needs of the community and students by offering a variety of curricula;
>
> Provide opportunities for those desiring training through the technical level in business, science, applied arts, and engineering;
>
> Provide opportunities for those desiring occupationally-oriented training in skilled trades and health related fields;
>
> Provide courses for persons of suitable age who failed to complete high school, and to offer general adult education courses for social, cultural, and personal development;
>
> Provide educational services — speakers, resource personnel, and special programs — to individuals and groups as requested;
>
> Provide opportunities for the educational, cultural, and social aspects of the individual's total development through well-rounded curricula, adequate facilities and equipment, qualified faculty, and student activities.

ACCREDITATION

The Institute is accredited by the Southern Association of Colleges and Schools.

The Dental Assisting Program is accredited by the Council on Dental Education of the American Dental Association.

The Drafting and Design Technology and the Electronics Engineering Technology Programs are accredited by the Engineers' Council for Professional Development.

ADMISSIONS

ADMISSIONS

Through following an "open door" policy of admissions at the Technical Institute of Alamance, it is possible for a high school graduate or a school leaver 18 years old or older needing a formal educational opportunity to be served by the institution.

The "open door" policy does not eliminate the restrictions on admission to specific programs. It does mean that these restrictions will be flexible enough under careful guidance to allow a student every reasonable opportunity to prove himself under good teaching. A student will be afforded the opportunity to eliminate admission requirement deficiencies through remedial work, and may remain in the program of remedial work as long as he makes satisfactory progress. As soon as a student can meet the specific admission requirements, he may be enrolled in a curriculum. Refer to specific department for admission requirements for each program.

GENERAL PROCEDURES

1. The applicant must be eighteen years of age or older (or a high school graduate) to be admitted to curriculum programs at the Institute.
2. Applicant must submit an application form.
3. Applicant must have high school (and college) transcript or previous academic work or high school equivalency (GED) scores submitted to the Institute.
4. Applicant should report to the Institute for admission counseling and appropriate placement testing. There is no fee for this service. (Appointment schedules for testing will be mailed as applications are processed).
5. Applicant must be in acceptable physical and mental health. Handicapped persons will be considered on an individual basis.

In addition to the basic standards for admission, specific requirements may apply to certain programs. These requirements may be found in the appropriate program section of the catalog.

To facilitate acceptance, applicants should if at all possible submit applications thirty days prior to registration. It is especially important to apply early when applying for programs in which enrollment may be limited.

VETERANS

The Technical Institute of Alamance is approved by the Veterans Administration for students who are eligible under the law. Veterans and dependents or students who expect to enroll under the War Orphans Educational Assistance Act should:

(1) Notify the Institute of intent to enroll under the Veterans Administration.

(2) Make application and be accepted by the Institute.

(3) Notify the Veterans Administration of intended enrollment, specifying the curruculum to which you have been accepted.

(4) Details on veterans enrollment are available in a published memorandum from the Financial Aid Office. This veterans memorandum is updated and revised as information changes. A veteran's pay may depend upon how well he keeps up with this information.

SPECIAL STUDENTS

Special students are those who are enrolled for course credit but not in a curriculum leading to the diploma or the associate degree. Students enrolled in this status will normally be required to meet the prerequisites for the course or to demonstrate a necessary level of competence by an appropriate test. Students enrolled on this basis must do so through arrangement with the Student Personnel Office.

PROVISIONAL STATUS STUDENTS

Students who have not completed placement tests or lack sufficient data for their file may be classified as provisional students. Those students on this status must complete all admission requirements following actual enrollment.

REGISTRATION PERIODS

The Institute operates on a quarter system. Registration of new students for all curriculum programs occurs at the beginning of the fall quarter in September and any other quarter when there are sufficient students to begin a program.

Continuing students may consult the Institute calendar for specific dates of subsequent registration periods.

CLASS HOURS

Courses are scheduled between the hours of 8:00 A.M. and 10:30 P.M., Monday through Thursday and between 8:00 A.M. to 5:00 P.M. on Fridays.

SCHEDULE OF CURRICULUM CLASSES

Shortly before registration each quarter, the Institute will announce a master schedule of courses to be offered. This will generally include those courses required for a student to complete the work as outlined in the catalog for his curriculum. In some instances, however, it will be necessary for the Institute to rearrange this sequence of course offerings. Every effort will be made to enable a student to complete his program in the minimum possible time. Whenever practical, make-up classes and special courses will be offered to those needing them.

PRE-SCHEDULING

Using this master schedule of courses, each student must consult with his advisor prior to registration to arrange a class schedule to meet his own particular requirements. A pre-scheduling period will be announced each quarter.

COURSE LOAD

The recommended course load (15 to 22 credit hours) varies from one curriculum to another. The length of time indicated to complete any program is based on the recommended course load as outlined in the catalog.

ANY DEVIATION FROM THE RECOMMENDED COURSE LOAD — AS SHOWN IN THE CATALOG — MAY EXTEND THE TIME FOR GRADUATION.

The minimum load to be classified as a full time student is 12 credit hours.

Students receiving educational benefits from Social Security are required to carry the minimum full load.

Students receiving benefits from Veterans Administration are based on the following criteria:

BENEFITS	ASSOCIATE DEGREE	DIPLOMA
Full benefits	12 Credit Hours (Min.)	30 Clock Hours (Min.)
Three-quarter Benefits	9-11 Credit Hours	23 Clock Hours (Min.)
Half-time Benefits	6-8 Credit Hours	15 Clock Hours (Min.)

Students receiving general financial aid such as work study, vocational rehabilitation, grants, scholarships and loans must carry a minimum full load.

TRANSFER CREDIT

The Technical Institute of Alamance permits admission with transfer credit for students from member institutions of the North Carolina Department of Community Colleges, and other recognized and accredited institutions. Content of such courses must closely parallel those for which credit is sought at the Institute.

Transfer credit may be awarded upon the recommendation of the Department Head and approval of the Dean of Instruction. Applications for transfer credit will be evaluated according to each situation. Transferring from one curriculum to another within TIA will be done in the same manner. Transfer credit courses will not be used in the computation of quality point averages.

A candidate for a diploma/degree must take a minimum of 25% of his major (excluding credit by examination) at TIA as determined by the Department Head and the Division Chairman.

A maximum of 25% of a student's (diploma/degree) program may be waived by credit by exam.

Course requirements for graduation may be allowed for credit by proficiency examination.

TRANSFER CREDIT TO OTHER SCHOOLS OR COLLEGES

There are an increasing number of schools and colleges who are accepting course work, completed in a technical program at TIA for credit toward the Bachelor's Degree. Most of these colleges consider each applicant and his record individually and the courses for which credit is sought must be similar to the course (s) offered by that institution. Some colleges give credit on the basis of examinations. A few colleges give full credit for the Associate in Applied Science Degree either toward a Bachelor of Arts, Bachelor of Science or Bachelor of Technology.

For those few students who do desire to continue their education after graduation from TIA, there are indeed expanding opportunities to do so. If you are one of these, you should see a counselor at TIA for further details or write the college being considered.

WAIVING OF COURSE REQUIREMENTS BY PROFICIENCY EXAMINATION

Under special requirements set up by each Department Head of a curriculum department, a student may be allowed credit toward graduation for past schooling or work experience. The student should confer with his major Department Head in regard to procedure to be followed. A maximum of 25% of a student's diploma/degree program may be waived by credit by examination.

A grade symbol of CE (Credit by Examination) will be awarded for courses for which credit is given on the basis of proficiency examination, previous education, or work experience. The course hours for such courses posted as "CE" will be computed toward graduation requirements; however, no quality points will be credited, and the hours will not be computed in the quality point average.

AUDIT STUDENTS

A student may elect to audit a course or courses. Those auditing receive no credit and do not have to take any examination; otherwise, participation in class is on the same basis as a credit student. The fee for auditing is the same as the fee for credit.

EXPENSES

RESIDENCE STATUS FOR TUITION PAYMENT

1. *General:* The tuition charge for legal residents of North Carolina is less than for nonresidents.

   G.S. 116-143.1(b) States, "To qualify for in-state tuition a legal resident must have maintained his domicile in North Carolina for at least the 12 months immediately prior to his classification as a resident for tuition purposes. In order to be eligible for such classification, the individual must establish that his or her presence in the State during such twelve-month period was for purposes of maintaining a bona fide domicile rather than for purposes of mere temporary residence incident to enrollment in an institution of higher education; further, (1) if the parents (or court-appointed legal guardian) of the individual seeking resident classification are (is) bona fide domiciliaries of this State, this fact shall be prima facie evidence of domiciliary status of the individual applicant and (2) if such parents or guardian are not bona fide domiciliaries of this State, this fact shall be prima facie evidence of non-domiciliary status of the individual."

   Regulations concerning the classification of students by residence for purposes of applicable tuition differentials, are set forth in detail in *A Manual To Assist The Public Higher Education Institutions of North Carolina in the Matter of Student Residence Classification for Tuition Purposes*. Each enrolled student is responsible for knowing the contents of that *Manual,* which is the controlling administrative statement of policy on this subject. Copies of the *Manual* are available on request.

2. *Minors*: A minor is any person who has not reached the age of eighteen years. The legal residence of a person under eighteen years of age at the time of his first enrollment in an institution of higher education in this state is that of his parents, surviving parent, or legal guardian. In cases where parents are divorced or legally separated, the legal residence of the father will control unless custody of the minor has been awarded by court to the mother or to a legal guardian other than a parent. No claim of residence in North Carolina based upon residence of a guardian in North Carolina will be considered if either parent is living unless the action of the court appointing the guardian antedates the student's first enrollment in a North Carolina institution of higher education by at least twelve months.

3. *Adults*: An adult is any person who has reached the age of eighteen years. Persons, eighteen or more years of age at the time of first enrollment in an institution of higher education, are responsible for establishing their own

domicile. Persons reaching the age of eighteen, whose parents are and have been domiciled in North Carolina for at least the preceding twelve months, retain North Carolina residence for tuition payment purposes until domicile in North Carolina is abandoned. If North Carolina residence is abandoned by an adult, maintenance of North Carolina domicile for twelve months as a non-student is required to regain in-state status for tuition payment purposes.

4. *Married Students:* The legal residence of a wife follows that of her husband, except that a woman currently enrolled as an in-state student in an institution of higher education may continue as a resident even though she marries a nonresident. If the husband is a nonresident and separation or divorce occurs, the woman may qualify for in-state tuition after establishing her domicile in North Carolina for at least twelve months as a nonresident.

5. *Military Personnel:* No person shall lose his in-state resident status by serving in the Armed Forces outside of the State of North Carolina. A member of the Armed Forces may obtain in-state residence status for himself, his spouse, or his children after maintaining his domicile in North Carolina for at least the twelve months next preceding his or their enrollment or re-enrollment in an institution of higher education in this state.

6. *Aliens*: Aliens lawfully admitted to the United States for permanent residence may establish North Carolina residence in the same manner as any other nonresident.

7. *Property and Taxes:* Ownership of property in or payment of taxes to the State of North Carolina apart from legal residence will not qualify one for the in-state tuition rate.

8. *Change of Status:* The residence status of any student is determined as of the time of his first enrollment in an institution of higher education in North Carolina except:

   (a) In the case of a non-resident student at the time of first enrollment who has subsequently maintained domicile as a non-student for a least twelve consecutive months and

   (b) In the case of a resident who abandons his legal residence in North Carolina.

   In either case, the appropriate tuition will become effective at the beginning of the first subsequent term enrolled.

9. *Responsibility of Students:* Any student or prospective student in doubt concerning his residence status must bear the responsibility for securing a ruling by stating his

case in writing to the Registrar. The student who, due to subsequent events, becomes eligible for a change in classification, whether from out-of-state to in-state or the reverse, has the responsibility of immediately informing the Registrar of his circumstance in writing. Failure to give complete and correct information regarding residence constitutes grounds for disciplinary action

TUITION: NORTH CAROLINA RESIDENT

Full-time students who are residents of North Carolina pay a maximum tuition of $32.00 per quarter.

Part-time students are charged a fee of $2.50 per credit hour.

OUT-OF-STATE (NON-RESIDENT)

Students who are not legal residents of North Carolina pay a higher tuition than do residents. Full-time, non-resident students are charged a tuition fee of $137.50 per quarter.

Part-time, non-resident students are charged $11.45 per credit hour.

An activity fee of $3.00 per quarter is required of a full-time students both N.C. resident and non-resident. Part-time students have an activity fee of $.50 per quarter.

The fee is due at the beginning of each quarter. These fees are disbursed at the discretion of the Student Government Association. The cost of diplomas and degrees are included within the student activity fee for all graduating students from curriculum programs. Activities also included in the SGA budget are the athletic program, student publication, social events, and other student body programs or activities. This fee is not refundable.

LATE REGISTRATION FEE

To prevent or reduce the problems incidental to late registration, registration periods are scheduled for specific dates and definite procedures are established.

Any student who fails to complete registration for all classes and to make the required payment of expenses and fees on the prescribed registration day according to the official school calendar will be charged a late registration fee of $5.00. This applies to all curriculum students with no exception — day, evening, full-time, part-time, special, and audit enrollees.

Those with anticipated financial difficulties should contact the financial aid officer, in person, in advance of the registration date.

BOOKS AND SUPPLIES

All of the student's necessary textbooks can be acquired from the Institute's bookstore. Drawing supplies, slide rules, nursing caps, nurses and dental assistant pins, composition books, pens, pencils, decals and other miscellaneous items are also available in the bookstore. Class rings may also be ordered with the required deposits.

The bookstore is operated on a strictly cash basis and there is no refund on books or supplies. It would be to the student's advantage to meet each class at least once before attempting to purchase texts and materials.

Some textbooks cost as little as $1.25 and others as much as $15.00, but the average cost of each book is approximately $8.00. Most students should anticipate spending an average of approximately $40.00 per quarter for books, supplies, and materials. The total cost varies according to the particular program. The nursing, drafting and commercial art programs require special items and/or instructional kits which may vary from quarter to quarter. Students in Automotive Mechanics may be required to furnish a set of basic hand tools.

INSURANCE

Accident insurance, covering hours in school and transportation to and from school, is available for $3.00 per year. Students desiring this insurance may make payment during registration and at other designated times to the Business Office. It is not refundable.

Students enrolled in all shops and labs are particularly urged to take advantage of this insurance.

SUMMARY OF QUARTERLY EXPENSES FOR FULL TIME STUDENTS*

	N.C. Resident	Non-Resident	
Tuition	$32.00	$137.50	
Activity Fee			
Full-Time Student	3.00	3.00	
Part-Time Student	.50	.50	
Insurance(optional)	3.00	3.00	(paid once a year)
Books and Supplies (Estimate)	40.00	40.00	
Total	78.50	184.00	

Students in the curriculum or programs listed below will have additional expenses (approximately):

*All fees subject to change.

Practical Nursing: $20.00 (Uniforms) $20.00 (State Nursing Board Exam)
Commercial Art: $75.00 (Drafting Kit and Supplies)
Drafting: $30.00 (Drafting Kit and Supplies)
Automotive Mechanics: $45.00 (Tool Kit)
Dental Assistance: $60.00 Uniforms and Shoes

The cost of board and room is not included in the above fees. Assistance in planning a total budget will be provided by the Financial Aid Officer upon request.

FINANCIAL AID AND ASSISTANCE

The purpose of student financial aid is to provide financial assistance to students who, without such aid, would be unable to attend TIA. Recognition is made that the principal responsibility of financing an education lies with the family and with the student himself. Financial aid consists of scholarships or grants, loans, and employment or a combination of these. All recipients must be full-time students. Applications for financial aid may be obtained from the Financial Aid Officer.

Other student aids, veterans benefits, and social security are coordinated by the Financial Aid Officer.

A student receiving Financial aid must maintain satisfactory progress as defined by the probation policy in the catalog. All requests for financial assistance should be made well in advance of registration.

TRANSCRIPT FEE

The first transcript is free. After the initial transcript is issued, a $1.00 fee will be charged for each subsequent transcript.

REFUND POLICIES

Cash Refund

Tuition refund for students shall not be made unless the student is, in the judgment of the institution, compelled to withdraw for unavoidable reasons. In such cases, two-thirds (2/3) of the student's tuition may be refunded if the student withdraws within ten (10) calendar days after the first day of classes as published in the school calendar. Tuition refunds will not be considered after that time. Tuition refunds will not be considered for tuitions of Five Dollars ($5.00) or less except if a course or curriculum fails to materialize, and in such case all the tuition will be refunded. Exception: Those students who are veterans or war orphans receiving benefits under U.S. Code, Title 38, Chapter 33 and 35 may be refunded the pro rata portion of the tuition fee not used at the time of withdrawal of such students.

CREDIT FOR UNREFUNDED TUITION AND FEES

When a student, having paid the required tuition and fees for a quarter, withdraws from the institution before the end of the quarter and the reasons for the withdrawal are found excusable, the student may be allowed credit for unrefunded tuition and fees if he applies for re-admission during any of the next four calendar quarters and petitions in writing to be allowed such credit.

When a student, having paid the required tuition and fees for a quarter, dies during the quarter, (prior to or on the last day of examinations) all tuition and fees for that quarter may be refunded to the estate of the deceased.

There is no refund on payments for activity fees, insurance premium fees, yearbook, and special fees such as late registration.

SERVICES

COUNSELING

Counseling in relation to program choice, entrance placement, educational objectives and vocational goals is available to all students at the Technical Institute of Alamance. Prospective students are encouraged to utilize these services as they are making plans for further education.

Information concerning entrance and graduation requirements, financial aid, employment trends, job opportunities, student activities, and student policies are all services offered by the counseling staff. Testing for aptitude and interest is available when appropriate.

Counseling for personal growth and adjustment on the basis of individual need is one of the primary services offered by the staff. Assistance in referral to other agencies is available.

Counselors are available at the Student Personnel Office.

ADVISOR

Upon enrollment, each student is assigned a faculty advisor who will provide academic guidance throughout his program. The advisor will assist in planning the course load and schedule each quarter until graduation. The advisor must approve all schedules and schedule changes.

ORIENTATION

The purpose of the orientation program is to introduce the student to the administrative personnel, faculty, and student leaders. Tours and discussions familiarize the student with the overall educational opportunity at TIA. The rules, policies, and privileges as well as the use of facilities, resources, and programs are discussed. All new students and transfer students are expected to attend.

STUDENT HOUSING

The Institute does not have dormitory facilities and does not assume responsibility for housing. However, Burlington residents do voluntarily offer housing facilities. Costs will vary between $12 and $18 per week according to livability and convenience. Students are urged to make early plans for housing and investigate before enrollment date.

PLACEMENT SERVICE

The Placement Service is designed to guide and assist the student in obtaining the type of position for which he is best qualified.

Prospective employers contact the Institute in their recruitment of qualified employees. Information on these job opportunities is shared with the students seeking employment. Information concerning employment trends and salary data is also available.

The Institute does not guarantee employment; the primary responsibility for securing employment lies with the student. Those needing assistance in job placement should contact the Student Personnel Office.

GENERAL EDUCATIONAL DEVELOPMENT TEST

The GEDT is the high school equivalency examination recognized by the North Carolina State Board of Education. Successful completion of the GEDT indicates that the individual has demonstrated that he has the general educational competence comparable to that of a high school graduate. Persons taking the test must be at least 19 years of age. A person who is 18 years of age is also eligible if he has been out of the regular high school program for at least six months.

The test is given on campus several times a year. There is no charge for the GEDT test. Anyone interested in preparing to take the test should contact a counselor at the Institute.

STUDENT LOUNGE

The Student Lounge is conveniently located in the building and is open to all students as a place for relaxation and refreshments. A variety of soft drinks, along with coffee, candy, and sandwiches are available at the snack bar. Smoking is permitted only in the lounge.

LEARNING RESOURCES CENTER

A constant effort is made to establish the Learning Resources Center as an integral and vital part of each student's educational process. As its goal it strives to become a flexible extension of the classroom and a viable tool of the faculty.

The LRC consists of three parts all working together in a three-fold purpose: the library, the Learning Laboratory and the audiovisual center.

THE LIBRARY

The library has a collection of about 20,000 volumes, principally technical, but augmented with a well-rounded supporting collection covering all fields of interest. The non-book collection includes over 200 periodicals, microfilm, microfiche, maps, pamphlets, career and vocational brochures, school catalogs and many others.

Believing in the individuality of each student the staff is always ready to give any help needed and to allow private research or browsing as the student desires.

Hours 8:00-5:00 Monday-Friday
6:00-9:00 Monday-Thursday

The Library is also open to the public. Private citizens, industries, businesses, community agencies, schools, teachers, civic organizations, churches and many others will find something here of interest to them.

AUDIOVISUAL DEPARTMENT

The audiovisual department offers many and varied types of A-V media and equipment, most of which are available for student use when it is for class use or research for educational purposes.

The A-V department believes that a wide variety of available material helps to provide the student the opportunity to enjoy his education, gives him a chance to see more than one approach to the problem, and exposes him to varied stimuli.

LEARNING LABORATORY

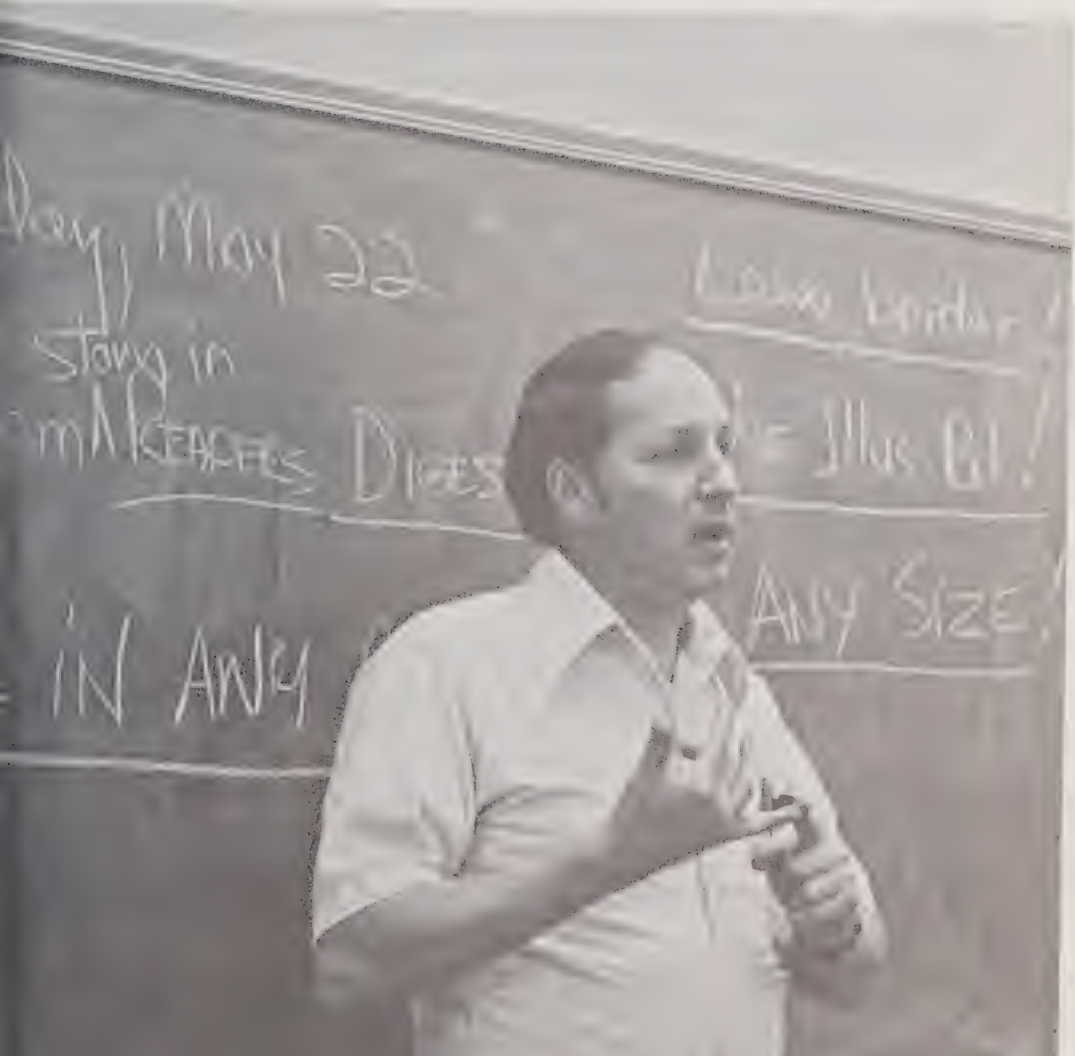
The Learning Laboratory was devised as a means of offering an opportunity to learn to many people who feel that they need to further their education, or to students who desire instruction designed to fulfill his needs.

To implement this program the lab is equipped with a wide variety of programmed materials, audiovisual materials and equipment, books, etc.

The staff treats every student as an individual and is always ready to help or design instruction suited to each students particular needs.

Hours 8:00-10:00 Monday-Thursday
8:00-4:00 Friday

ACADEMIC REGULATIONS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GRADING AND QUALITY POINT SYSTEM

The Technical Institute of Alamance operates on a quality point system. In the computation of a student's average, one quarter hour of work passed at TIA with a grade of A,B,C,D, or F is given a numerical value of 4,3,2,1,0 respectively, which is then multiplied by the number of quarter hours represented by the course. The resulting product is the number of quality points earned for the course with the grade received.

The quality point average is determined by dividing the total quality points earned in all courses by the total number of quarter credit hours scheduled including any courses failed.

GRADING AND QUALITY POINT SYSTEM

At the end of each quarter grades are given in each course by letters which are indicators of the quality of work done by the student.

A — Excellent	4 quality points for each credit hour
B — Good	3 quality points for each credit hour
C — Satisfactory	2 quality points for each credit hour
D — Passing	1 quality point for each credit hour
F — Failure	0 quality points. This signifies that the student has not met the minimum objectives of the course.
I — Incomplete	No credit. A grade of incomplete is assigned only when a specific requirement of a course has not been met. The instructor must specify in writing the conditions under which the "I" is to be removed. Incompletes not removed within one quarter will be recorded as "W" or "F" as determined by the instructor.
R — Re-enroll	No credit until the course objectives are completed. Student must re-enroll to earn credit.
W — Withdrawn	This signifies that the student has withdrawn during the first three weeks of the quarter, or later in the quarter with approval of the instructor.
AU — Audit	This signifies that the student has taken a course for no credit.
CE — Credit by Examination	This signifies that the student has met the objectives of the course and has demonstrated this by taking a proficiency examination. See "Waiving of Course Requirements," p. 17.

TR — Transfer	This signifies that credit for the course was accepted from another institution.

The QPA (quality point average) is a general measure of the quality of a student's work. The QPA is determined by dividing the total number of grade points earned by the total number of quarter hours attempted (excluding "I" and "R" grades).

ACADEMIC PROBATION AND DISMISSAL

Students whose quality point average for the quarter is less than 2.0 but whose cumulative QPA remains 2.0 or above will receive notice of "Academic Warning" on their grade report. Failure to achieve a 2.0 cumulative quality point average at the end of any quarter will result in the student being placed on "Academic Probation." The student will be notified of his status on his grade report and will be required to schedule a conference with a counselor.

A student on academic probation may remain in his program of study as long as his following quarter's QPA meets the minimum of 1.50 and continues to show improvement over the previous quarter's work. The faculty advisor may require the student to take a reduced load, drop certain courses or take developmental work. If it becomes evident that the student is unable to maintain satisfactory progress, the Department Head will recommend to the Dean of Instruction that the student be suspended or dismissed from his present program of study.

Decision to suspend or dismiss students will be made at the discretion of the Dean of Instruction after consultation with appropriate personnel. Dismissed or suspended students will be referred to Student Personnel for discussion of alternatives available to the student.

Re-admittance will be at the discretion of the Admissions Committee and with the approval of the President. Request for readmission must be submitted in writing to the Director of Student Personnel and should be submitted at least two weeks before the beginning of the quarter.

SPECIAL HELP

It is the student's responsibility to seek out extra help if necessary. Instructors may not require a person come in, but they are available for conferences and are always willing to help.

CLASS ATTENDANCE

POLICY

Regular class attendance is regarded as essential to the academic progress of the student. Registration in a course is regarded as a contract between the student and the institute.

If a student's class attendance threatens his progress in the course or impedes the progress of the class, he may be asked to withdraw from the class

State policy requires that a student be dropped no later than the 5th unexcused absence.

STUDENT'S RESPONSIBILITY

1. In no instance does absence from class relieve the student from the responsibility for the performance of any part of his course work.
2. The student is responsible for complying with any special attendance regulations specified by his instructor.
3. The student is responsible for initiating any request to make up work missed because of class absence. The decision to assist the student with "make up" work, including tests, in every case rests with the instructor.

INSTRUCTOR'S RESPONSIBILITY

1. An instructor may prescribe such reasonable regulations as he feels necessary. At the beginning of each quarter he shall inform the students in his classes of these regulations and file a copy with the Dean of Instruction.
2. Cases of unsatisfactory class attendance with a recommendation of appropriate action are to be reported to the Dean of Instruction.

INSTRUCTOR ABSENCES

In cases when the instructor is not in class and other arrangements have not been made, the students are automatically dismissed after ten minutes. (30 minutes for evening classes). A roll must be signed by the students present and turned in by one of them to the General Office.

SCHEDULE CHANGES

Students should consult with their advisor and the Student Personnel Office before making any changes in schedule.

Adding Courses — Courses may be added only through the 5th academic day of the quarter.

Dropping Courses & Withdrawing from School — Courses dropped during the first 3 weeks are recorded as W (Withdrawal).

Courses dropped after the third week will be recorded as W,F, or R as determined by the instructor.

A student who over-cuts a class may be dropped from class rolls at the discretion of the instructor.

WITHDRAWAL PROCEDURES

A student who intends to withdraw from (*drop*) a course or who intends to *withdraw from school*, must obtain forms for this purpose from the Office of the Registrar. Signatures of the advisor/counselor, the instructor for each course involved (and grade) and the Business Manager must be secured and the completed withdrawal form returned to the Registrar. (See Refund Policy).

APPEALS PROCEDURE

1. Appeals regarding disagreements, controversies, complaints, and disciplinary action arising out of instructional related situations shall be appealed to the student's Division Chairman. In the case where the Division Chairman is one of the parties directly involved in the controversy involving a student, or when the Division Chairman is unavailable, then the matter shall be decided by the Director of Occupational Education.
2. Appeals not covered in part 1 above should be made to the Director of Student Personnel.
3. Further appeals may be taken by the student and/or faculty or staff member from the decisions of the Division Chairman (or Director of Occupational Education, as the case may be) or Director of Student Personnel to the Appeals Committee. Requests for appeal must be submitted in writing to the chairman of the Appeals Committee (The Administrative Assistant) within five (5) school days after a decision has been made.

ACADEMIC RECOGNITIONS

The *President's List* honors those students who qualify for the Dean's List but who obtain a 3.8 or higher quality point average for that quarter.

The *Dean's List* is published quarterly and contains the names of students who have quality point average of 3.3 to 3.79 for that quarter. No grade may be lower than C and the student must carry a minimum of 12 quarter credit hours to be eligible.

GRADUATION REQUIREMENTS

Students are required to apply as candidates for the diploma or the degree. This must be completed during the first two weeks of the last quarter of school attendance. This insures that the candidate's record will be properly reviewed, and that he will be notified of any deficiencies.

Requirements for the degree or diploma will vary according to curriculum. Course requirements for graduation are within this catalog. All students must have a grade point average of 2.0 (C average) to be eligible for graduation.

High Honors are awarded to those students who have earned a cumulative quality point average of 3.8 or higher while studying at the Institute.

Honors are awarded at Graduation to students who have earned a cumulative quality point average of 3.3 to 3.79 during their course of study.

Marshals for graduation are selected on the basis of having the two highest averages in the class to graduate the following year. Two students receive this honor.

Ushers for graduation are also selected on the basis of outstanding academic performance.

STUDENT LIFE

The education within any institution of higher learning is characterized not only by the quality of the academic program it offers, but also in the opportunity it offers for its members to grow and learn about themselves. The development of relationships among people of varying natures and backgrounds and the involvement and learning through participation in student functions and activities is very much a part of the campus life.

STUDENT GOVERNMENT

The Student Government Association provides democratic self-government for the students of the Institute. The Association is divided into the Executive Committee, composed of the Student Body President, Vice-President, Secretary and Treasurer; and the Senate, composed of elected representatives from each of the five curriculum divisions.

The Student Government Association is responsible for developing policies and programs for the general welfare of the Student Body. All campus clubs, student organizations, and athletics programs are approved through the Student Government Association.

The Student Review Board is a standing committee of the Student Government Association. Composed of student representatives, the Board hears the appeals of the students accused of violations of policy or regulations of TIA.

STUDENT ACTIVITIES

The variety of campus organizations and clubs provide a place for every student to become involved and be of service to the Institute and the community. Many opportunities for self-exploration and leadership are to be found in Student Activities.

Clubs

CIRCLE K — affiliated with Kiwanis International — is an organization of young men and women whose purpose is to emphasize the advantages of the American-Canadian way of life as it provides an opportunity for leadership training through service to the campus and community.

ROTARACT CLUB — dedicated to the development of the constructive leadership and personal integrity of its young men and women. Emphasis is on individual responsibility as the basis of personal success, community improvement and group achievement.

CHOIR — made up of young men and women who enjoy music and like to sing.

CHEERLEADERS ASSOCIATION — members are elected by the Student Body. The association is co-educational. They lead the cheering at all basketball events.

BLACK STUDENT UNION — the purpose of this organization is to provide tutoring services to TIA students, fund raising for sickle-cell anemia and Thanksgiving baskets to needy families.

Membership in clubs and organizations at TIA is open to all students without regard to race, sex, nationality or religion.

Athletic

TIA has an outstanding program and record in the area of sports. You are encouraged to add your talents and enthusiasm to make another winning year for the Titans. See the Student Activities Coordinator for more information.

BASKETBALL — Conference. (Piedmont Athletic Conference of Technical Institutes).

SOFTBALL — City League of Burlington.

GOLF — Non-conference.

BOWLING — Non-conference.

VOLLEYBALL — YMCA Tournament.

TENNIS — Non-conference.

Publications

THE ECHO — This newspaper is published by the students at the Technical Institute of Alamance. The paper provides coverage of campus news events, publicity for activities, and other news of special interest to the student body. Students in Journalism 212 earn credit for work on the newspaper. All staff members work under the instruction of a professional.

THE STUDENT HANDBOOK — Published through the Student Personnel Office, the handbook provides information of concern to students, including student regulations, policies, student government, and student activities.

STUDENT POLICIES

Student Conduct

Students will be expected to conduct themselves at all times as individuals of prudence and maturity. The rights and feelings of others will be respected. Students shall demonstrate a high regard for school facilities and property and for the personal property of others.

School regulations which serve to control such activities as vehicular traffic and parking, smoking, and other aspects of personal conduct must be observed. Students may be suspended or dismissed for conduct which is considered incompatible with standards of propriety and good judgment.

The decision to suspend or dismiss students will be at the discretion of the Director of Student Personnel after consultation with appropriate administrative personnel.

Dress Code

It is not the intent of the Institute to impose upon individual style and creativity. Rather, it would encourage all students to dress in a manner in keeping with the serious academic intent of the Institute and in a manner acceptable to the community which the Institute serves.

In light of this, TIA students are expected to use their own judgment in what is appropriate dress. Because of the hazards created in the building, bare feet are prohibited.

DISRUPTIVE POLICY

SEC. I-1 Definition of Disruptive Conduct

The Technical Institute of Alamance honors the right of free discussion and expression, peaceful picketing and demonstrations, the right to petition and peaceably to assemble. That these rights are a part of the fabric of this institution is not questioned. They must remain secure. It is equally clear, however, that in a community of learning willful disruption of the educational process, destruction of property, and interference with the rights of other members of the community cannot be tolerated.

(a) Any student, faculty member (including full-time or part-time instructor), or employee who willfully by use of violence, force, coercion, threat, intimidation or fear, obstructs, disrupts or attempts to obstruct or disrupt, the normal operations or functions of the Technical Institute of Alamance, or who advises, procures, or incites others to do so, shall be subject to suspension, expulsion, discharge, or dismissal from the Institute. The following, while not intended to be exclusive, illustrate the offenses encompassed herein: occupation of the Institute building or part thereof with intent to deprive others of its use; blocking the entrance or exit of the Institute building or corridor or room therein; setting fire to or by any other means substantially damaging building or property, or the property of others on the Technical Institute premises; except as necessary for law enforcement, any display of or attempt or threat to use firearms or explosives or, for the purpose of intimidating, other weapons, in the Institute building or on the Institute campus; prevention of the convening, continuation or orderly conduct of any Institute class or activity or of any lawful meeting or assembly in the Institute building or on the Institute campus; inciting or organizing attempts to prevent student attendance at classes; and, except with the permission of the President, blocking normal pedestrian or vehicular traffic on the Institute campus.

(b) The possession of bowie knives, dirks, daggers, loaded canes, sword canes, machetes, pistols, rifles, repeating rifles, shotguns, pump guns, or other firearms or explosives upon the Institute campus or in the Institute owned or operated facility, unless explicitly permitted by the President or his designated representative in writing, is forbidden. Violation of this prohibition constitutes grounds for suspension from the Institute.

(c) Any faculty member (including any full-time or part-time instructor) who, with intent to obstruct or disrupt the normal operations or functions of the Institute, willfully fails or refuses to carry out validly assigned duties shall be subject to discharge.

SEC. I-2 Responsibility of the President

When it appears that there is a violation of Section I-1 (a), (b), or (c), it shall be the duty of the President, and he is fully authorized to act, to take all steps which he deems advisable to protect the best interest of the Technical Institute of Alamance, and to see that its Rules, Regulations and Policies are enforced. He shall insure that any person or persons found guilty after hearing shall be disciplined in such manner as may be warranted.

In carrying out these duties, the President may call upon any member of the Institute Administration, or member of the Faculty, and he may call upon any agency created to deal with cases arising under Section I-1. Conviction in any State or Federal Court shall not preclude the Institute from exercising its disciplinary authority in any offense under this or any other section of the policy.

Subject to the provisions of Section I-1 through I-4 of these policies, it shall be the duty of the President to exercise full authority in the regulation of student conduct and in matters of student discipline in the institution. In the discharge of this duty, delegation of such authority may be made by the President to faculty committees and to administrative or other officers of the institution, or to agencies of student government, in such manner and to such extents as may by the President be deemed necessary and expedient; provided, that in the discharge of this duty it shall be the duty of the President to secure to every student the right of due process and fair hearing, the presumption of innocence until found guilty, the right to know the evidence and to face witnesses testifying against him, and the right to such advice and assistance in his own defense as may be allowable under the regulations of the institution as approved by the President. In those instances where the denial of any of these rights is alleged, it shall be the duty of the President to review the proceedings.

SEC. I-3. Responsibility of the Trustees

The Trustees recognize that by statute they have the power to make such rules and regulations for the management of the Institute as they may deem necessary and expedient, not inconsistent with the constitution, laws of the State, and policies of the State Board of Education. While the Trustees fully appreciate their obligation in this respect, they further recognize that in dealing with those offenses against the Institute defined in Section I-1 (a), (b), or (c) hereof, they must impose the duty and authority of enforcing the policies set forth herein in the Chief Administrative Office of the Institute — the President. It will be the responsibility of the Trustees to furnish all possible assistance to the President when requested by him.

SEC. 1-4. No Amnesty

No administrative official, faculty member, student, or employee of the Institute shall have authority to grant amnesty or to make any promise as to prosecution or non-prosecution in any court, state, or federal, or before any student, faculty, administrative, or Trustee committee to any person charged with or suspected of violating Section I-1 (a), (b), or (c) of these Policies.

GENERAL ADULT EDUCATION

The Department of General Adult Education provides the adult community with a wide range of educational opportunities. Programs and courses are developed to meet the needs and interests of the general public or of local industry personnel and community agencies.

The adult at any educational level may select programs or courses to help him meet his objectives or educational goals. One can also make special requests; new courses are developed whenever interest indicates a need. A call should be made to the institute to indicate this need.

Currently, there are four main categories of courses in this department. They are: Adult Basic Education; Adult High School; Self-improvement and General Interest; and Occupational Extension.

Individuals desiring further information should refer to the Adult Education Catalog. Those individuals needing assistance in planning their educational program should consult with a counselor at the Institute or call the Adult Education Office.

ADULT BASIC EDUCATION

Basic education (grades 1-8) is open to any adult at least 18 years old.

Classes usually meet twice weekly, three hours each night, and are located in various communities throughout Alamance and Caswell Counties. Reading, writing, spelling, and arithmetic make up the major areas of study.

The student may enter the program at any time, and progress at his own speed.

After finishing the eighth grade level, the student may enter the Adult High School program.

Cost: No charge.

ADULT HIGH SCHOOL

In cooperation with the Burlington City Schools, TIA offers a high school diploma program to adults who did not graduate from the public schools. The student may transfer completed units from his previous high school. Units may be earned at TIA through regular classroom study in the fields of English, mathematics, social studies, science, foreign language, and vocational training.

Students may enter the High School Program at the beginning of any quarter, approximately September 1, December 1, March 1, and June 1.

Graduates will be issued an Adult High School Diploma from the Burlington City School System.

Adults who already have a high school diploma may enroll in high school courses for refresher training. Those students considering further training after high school should plan the sequence of high school courses with the assistance of a counselor.

Cost: $2.00 Fee plus textbooks — $3 - $5 per course.

SELF-IMPROVEMENT AND GENERAL INTEREST COURSES

A broad range of courses is offered in this area, including, but not limited to, the list below. Courses are offered day and night, for short durations, in order to fit the busy adult's schedule. Variations of course offerings are limited only by community interest and available instructors. Adults should call the Institute to express their areas of interest.

Cost: $2.00 Fee

Academic

- Special Remedial Courses
- College Preparatory Courses
- Advanced Courses

Creative Arts

- Music Reading Clinic
- Painting and Drawing
- Art Appreciation
- Art Exhibits
- Creative Writing

Parent Education

- Adolescent Behavior
- Pre-school Problems
- Child Psychology
- Maternity Care
- Modern Math for Parents
- Speech Therapy for Parents
- Drug Abuse

Language Arts

- Literature
- Creative Writing
- Public Speaking
- Speedreading
- Effective Listening

Hobby Courses

- Small Engine Repair
- Auto Tune-up at Home
- Orientation to the Auto for Women
- Ham Radio
- Orientation to the Motorcycle
- Volunteer Choir
- Ground School for Private Pilots
- Boating and Seamanship
- Horse Care and Management

Citizenship

- North Carolina History
- American History
- Political Parties
- The Constitution
- Forums on Community Affairs

Family Life

- Mental Hygiene
- Geriatrics
- Community-Family Relations
- Exceptional Children

Foreign Languages

- Conversational French
- Conversational Spanish

Homemaking

- Sewing
- Tailoring
- Interior Decorating
- Nutrition
- Landscaping and Gardening
- Drapery Making

Consumer Education

- Family Finance
- Law for the Layman
- Consumer Problems
- Personal Investments

OCCUPATIONAL EXTENSION

Extension courses are job-related part-time studies to increase skills of employees.

Special extension areas are state-wide in nature. These courses can be taken through many of the Community College Systems' institutions throughout the state, each issuing cumulative credits toward extension diplomas.

Cost: $2.00 Fee

Fire Service Training

Designed for full-time and volunteer firemen including courses such as:

- Arson
- Fire Brigade
- Salvage Operation
- Protective Equipment
- First Aid and Rescue
- Forcible Entry
- Extinguisher Practices
- Rope Practices
- Home Fire Safety
- Area Fire Schools

Hospitality Training

Designed for the hotel-motel and food service industry including such courses as:

- Waitress Training
- Housekeeping
- Management
- Communication
- Promotion
- Service Station Retailing
- Food Preparation
- School Food Service

Law Enforcement

Designed for law enforcement officers including such courses as:

- Introduction to Police Science
- Courts and Law
- Elements of Arrest
- Search and Seizure
- Evidence
- Investigation
- Motor Vehicle Law
- Liquor Law
- Administration
- Human and Public Relations
- Riot Control
- Chemical Tests for Alcohol

Business Education

- Beginning Typing
- Business English
- Beginning Shorthand
- Shorthand Review
- Office Machines
- Advanced Typing

Key Punch
Bookkeeping
Secretarial Practices
Advanced Shorthand
Accounting
Stenoscript — ABC Shorthand
Business Law

Management Development Programs

Designed for the supervisory or pre-supervisory level including courses in:

*Principles of Supervision
*Human Relations
*Act of Motivating People
*Economics in Business and Industry
*Job Methods
Conference Leadership
Job Instruction Training
*Creative Thinking
Industrial Safety and Accident Prevention
The Effective Executive
*Effective Communications
Effective Writing
Effective Speaking
Reading Improvement
Work Measurement
*Industrial First Aid
The Supervisor in North Carolina
The Supervisor and Employee Benefits
*Job Analysis Training
Cost Accounting for Supervisors
Employee Evaluation & Interviewing

A diploma in Management Development Programs is offered by the Department of Community Colleges in cooperation with the Technical Institute of Alamance. Supervisors may qualify for a MDP Diploma by completing nine required supervisory courses totaling 174 clock hours of instruction.

*Denotes required courses for Diploma

Extension courses are also developed to meet local needs as they arise. Courses are offered day or night, for various durations, to meet the working adult's schedule. The following courses represent examples of possible offerings:

Vocational

Basic Electricity
Air Conditioning
Machine Shop
Auto Mechanics
Drafting
Slide Rule
Blueprint Reading
Radio-TV Repair
Home Appliance Repair
Bricklaying
Farm Electrification
Apprenticeship Training
Power Sewing
Tractor Repair
Nurses Aide
Child Care
Small Engine Repair

Technical

Electronics
Computer Operation
Chemistry
Fabric Design
COBOL — Common Business Oriented Language
Precision Measurements

Professional

Review for Licensed Professional Engineers

Refresher for Registered Nurses
Fundamentals of Real Estate
Methods of Teaching Vocational Subjects
Graduate Courses in Education (In cooperation with graduate schools)
Advanced Pharmacology for Licensed Practical Nurses

Other special programs may be offered to meet the training requirements of a specific business or industry.

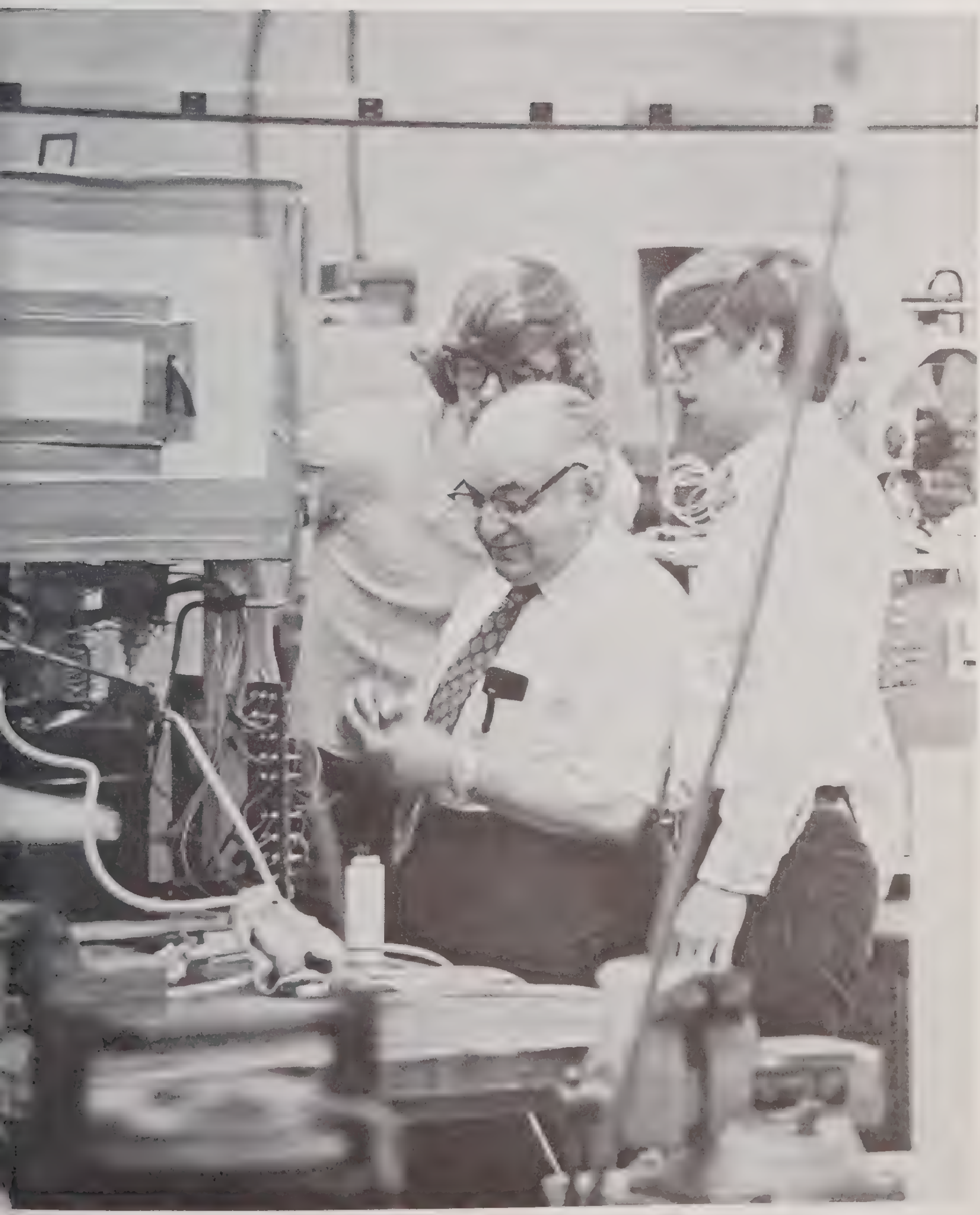
Instructional Personnel

Instructors are individuals who are academically qualified and/or who have demonstrated successful work experience in the subject area to be taught. Frequent use of case studies, audio-visual aids, and class participation insure a high degree of student interest.

Location and Time:

Classes are held both day and night at the Technical Institute at the sites of employment, and at various other locations convenient to the community.

CURRICULUM



Curriculum refers to all courses for which credit is given toward the Associate in Applied Science Degree of the Diploma.

PROGRAMS OF STUDY

The Technical Institute of Alamance offers the following programs of study:

APPLIED ARTS	CURRICULUM CODE
Audiovisual Technology	T-066
Commercial Art and Advertising Design	T-070
Technical Illustration	T-072
BUSINESS TECHNOLOGIES	
Accounting	T-016
Banking and Finance	T-112
Business Administration	T-018
Business Data Processing	T-022
Executive Secretary	T-030
General Office Technology	T-033
Industrial Management	T-049
Legal Secretary	T-031
Medical Secretary	T-032
ENGINEERING TECHNOLOGIES	
Chemical Technology	T-037
Drafting and Design Technology	T-043
Electronics Engineering Technology	T-045
Industrial Engineering Technology with Textile Option	T-047
Nuclear Engineering Technology	T-138
Health Physics Technology	T-137
PUBLIC SERVICE TECHNOLOGY	
Fire Science	T-063
HUMAN SERVICES	
Child Care	V-067
Dental Assisting	V-011
Early Childhood Education	T-073
Practical Nursing	V-038
MECHANICAL OCCUPATIONS	
Air Conditioning, Heating, and Refrigeration Technology	T-036
Air Conditioning, Heating, and Refrigeration Mechanic	V-024
Advanced Air Conditioning, Heating, and Refrigeration	V-024
Industrial Maintenance-Electromechanical	V-028
Manufacturing Technology	T-050

Machinist Trade	V-032
Advanced Machinist Trade	V-032
Mechanical Drafting	V-017
Transportation Maintenance Technology	T-095
Automotive Mechanics	V-003
Advanced Automotive Mechanics	V-003
Welding	V-050

COOPERATIVE EDUCATION

Cooperative-Education is an educational program developed by a cooperative arrangement between the school and the employers in the community for the purpose of providing students with their major objective of alternating in-school academic and vocational instruction with entry-level employment in any occupational field.

The student's total experience is planned, coordinated and supervised by the school and the employer.

On-the-job career training and school attendance may occur on alternate half-days, full days, weeks, quarters, or other periods of time, depending on the occupation and the desired learning experience. Upon initial employment, all, employers pay the students minimum wage; some pay more than the minimum wage.

Cooperative Education programs may be in such major fields as:

Applied Arts
Business Technology
Engineering Technology
Public Service Technology
Human Service Technology
Hospitality Technology
Special Technology
Vocational Curriculums

DEVELOPMENTAL STUDIES

Before taking certain courses in a given curriculum program, some students may need to correct a deficiency in or review mathematics, or communications. Building a strong background in these areas helps assure success in the chosen curriculum.

The need for developmental work is determined through placement testing and student-counselor conferences during the admissions process. Where appropriate, the student may be scheduled for developmental business math, technical math, English, and/or social studies.

There are several advantages in taking the developmental courses. They are designed to enable the student to work at his own rate of learning and to allow the student to continue the course beyond one quarter if additional time is needed. When the objectives of the course are mastered, credit for the comparable curriculum course is granted. Thus, the student can make continual progress toward graduation although *additional quarters will probably be needed to complete the program.*

CONTACT HOURS AND CREDIT HOURS

Quarterly credit hours are awarded to students on the following arrangements:

Class Work is lecture and other classroom instruction.

Credit of one quarter hour for *each hour* of class work per week for eleven weeks. The average hour of class will require two hours of assigned homework, for an average student.

Laboratory involves demonstration by instructor, experimentation and practice by students.

Credit of one quarter hour for *each two hours* of laboratory work per week for eleven weeks. One hour of assigned homework will accompany an average laboratory period of two hours.

Manipulative Laboratory involves development of manual skills and job proficiency.

Credit of one quarter hour for *each three hours* of manipulative lab for eleven weeks. No outside work will ordinarily be assigned to accompany this shop period.

Symbols

C = Class Hrs. Per Week
CH = Credit Hrs. Per Qtr.
L = Lab Hrs. Per Week
° = Manipulative Lab

PREREQUISITES

Prerequisites are indicated for most courses offered at TIA. These are intended to give the student some measure of the proficiency expected for those beginning a given course. In the event where other courses and/or experiences might qualify the student to take the course, the instructor may permit him to enroll.

ASSOCIATE DEGREE PROGRAMS

The Associate in Applied Science Degree is a two year degree designed to prepare the graduate to enter his chosen field as a highly skilled technician.

Admissions Requirements

To be admitted to the two-year Associate in Applied Science Degree programs, the applicant should qualify as follows:

1. Be 18 years of age and a high school graduate or have a North Carolina approved equivalent education.
2. Complete the general admissions procedures as outlined in Admissions and General Procedures p. 13.
3. Demonstrate an aptitude for his desired training through placement testing and student-counselor conferences.
4. Meet the specific requirements of the department to which he is applying. These are as follows:

A.

Air Conditioning and Refrigeration Technology	2 units of Algebra**
Business Data Processing	2 units of Algebra *
Chemical Technology	,, ,, ,, ,,
Drafting & Design Technology	,, ,, ,, ,,
Electronics Engineering Technology	,, ,, ,, ,,
Industrial Engineering Technology	,, ,, ,, ,,

*or one unit each of Algebra and Plane Geometry.

** Students not meeting this requirement may be required to take additional math courses at TIA.

B. It is suggested that students in the engineering technologies should have completed one unit of physical science with laboratory.

C. Commercial Art and Advertising Design
Audiovisual Technology
Technical Illustration

Draw the following on appropriate 8½" x 11" paper. Do not use oil paint, illustration board, mats, or frames of any kind. Pen and ink, tempera, wash, water colors, conte crayon and pastels (with a fixative) may be used.

1. A still life study.

2. A portrait or figure study of the human form.

3. One of the following:
   a. Design a travel poster. Some lettering must be included.
   b. Render a product such as an automobile, home appliance, or telephone. A title or some form of lettering must be included.

Facilities are available at the Institute for removal of academic deficiencies.

Students who do not meet the above specific requirements may be admitted with the approval of the appropriate curriculum department head.

DIPLOMA PROGRAMS

The Diploma is a one year program designed to provide the student with the skills of his chosen trade.

Admission Requirements

To be admitted to the one-year Diploma programs the applicant must qualify as follows:

1. Be at least 18 years of age and have the ability to enter into or make advancement in the area in which enrolled.
2. Have satisfactorily completed a minimum of eight (8) units of accredited secondary school work. Those who have not successfully completed eight (8) units of such work will be required to take other standard and/or local institution tests.
3. Demonstrate by placement tests and student/counselor conferences aptitude to insure ability to meet job requirements in the desired trade.
4. Meet the specific requirements of the department to which he is applying. These are as follows:

Practical Nursing — An interview with a member of the Practical Nursing staff is required. All PN applicants must have a high school diploma or a N.C. approved equivalent education. Students upon acceptance to the department must report the result of a physical and dental examination by licensed physicians. The results are to be reported on forms provided by the Institute.

Dental Assisting — An interview with a member of the Dental Assisting staff is required. All Dental Assistant applicants must have a high school diploma or a N.C. approved equivalent education as required by the American Dental Association under which this program is accredited.

Students upon acceptance to the department must report the results of a physical and dental examination by licensed physicians. The results are to be reported on forms provided by the Institute.

Child Care — An interview with a member of the Child Care staff is required.

Students upon acceptance to the department must report the result of a physical examination by a licensed physician. The results are to be reported on forms provided by the Institute.

It is suggested that students should have completed one unit of Algebra.

Facilities are available at the Institute for removal of deficiencies.

Applicants should refer to page 23 for information about special materials and equipment required for their programs.

APPLIED ARTS

Applied Arts consists of Commercial Art & Advertising Design, Audio-visual Technology, and Technical Illustration. These programs, for the first four quarters, have a common core curriculum. Beginning with the fifth quarter students will choose one of these programs for specialization.

Specific admission requirements are outlined on page 52.

AUDIOVISUAL TECHNOLOGY

Purpose

The Audiovisual Technology Program provides students with knowledge and skills in the production of communications media, including photography, film, graphic arts, television, sound recording, and various combinations of these media. Audiovisual courses include such subjects as materials and machines used in the field, specific audiovisual skills and their relationship to the learning process, and conversion of ideas into audio and/or visual materials. As a part of their course work, students create audiovisual materials for use in live teaching situations.

Job Description

Graduates will work in audiovisual or instructional resource centers of schools and colleges, or in commercial and industrial audiovisual departments, preparing training aids and advertising materials.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter - Fall			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	101	Basic Drawing and Design	4	8	8

Second Quarter - Winter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
DES	107	Life Drawing (or DES 116)	2	4	4
DES	124	Type and Lettering	4	6	7
ART	106	Art History I	3	0	3

Third Quarter - Spring			*C*	*L*	*CH*
DES	102	Drafting for Art	2	4	4
DES	218	Commercial Graphics	3	6	6
DES	116	Basic Photography (or DES 107)	2	4	4
ART	107	Art History II	3	0	3

Fourth Quarter - Summer		*C*	*L*	*CH*
SSC	Elective	3	0	3
	Technical Elective	4	2	4
	Technical Elective	4	2	4
ENG	English Elective	3	0	3

Fifth Quarter - Fall			*C*	*L*	*CH*
AVT	101	Transparency Production	2	2	3
DES	216	Photography II	3	4	5
SSC/ENG		Elective	3	0	3
BUS	102	Typewriting I	2	3	3
AVT	104	Sound Recording	2	2	3

Sixth Quarter - Winter			*C*	*L*	*CH*
AVT	102	Slide Production	2	2	3
SSC/TCH		Elective	3	0	3
AVT	210	Equipment Repair	2	2	3
*AVT	211	Equipment Repair	2	20	4
AVT	220	Information Resources	3	0	3
AVT	110	Office Machines & Filing	3	2	4
AVT	112	Teaching Methods	3	0	3

Seventh Quarter - Spring			*C*	*L*	*CH*
AVT	230	TV Production	2	2	3
*AVT	231	TV Production	2	10	3
AVT	235	Movie Making	2	2	3
AVT	240	Display Design	2	2	3
AVT	212	AV Department Procedures	3	0	3
*AVT	213	AV Department Procedures	3	30	6
*AVT	245	Work Experience	3	30	6

ELECTIVES - Refer to page 60

Four English courses and two Social Science courses are required of all art majors.

*Denotes Cooperative Work Program courses.

COMMERCIAL ART & ADVERTISING DESIGN

Purpose

Surveys have shown an increase in the demand for graduates possessing training in the field of Commercial Art and Advertising Design. The curriculum will prepare a graduate with a sound, well-rounded background for technical and creative achievement throughout his professional life. Design and illustration for commerce is continually advancing its standards, therefore, the background offered the student must be well-developed to prepare him for performance on a contemporary professional level. Graduates of this program will have an adequate background in illustration, layout and lettering, design, and production enabling them to be employed in some facet of Commercial Artistry.

Job Description

The commercial artist or advertising designer creates and designs layouts and illustrations for printing, creates posters, signboards, billboards, and show cards. He may design and prepare charts, diagrams, sketches, and maps for publication and exhibition, perform responsible illustrative work for package design, photography, lettering, and art work for the printing processes. Opportunities for graduates of this program may be in advertising agencies, newspapers and magazines, television studios, industrial advertising departments and design studios, department stores, government agencies, or in printing and publishing houses.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter - Fall

			C	L	CH
ENG	101	Composition I	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	101	Basic Drawing & Design	4	8	8

Second Quarter - Winter

			C	L	CH
ENG	102	Composition II	3	0	3
DES	107	Life Drawing (or DES 116)	2	4	4
DES	124	Type and Lettering	4	6	7
ART	106	Art History I	3	0	3

Third Quarter - Spring

			C	L	CH
DES	102	Drafting For Art	3	6	6
DES	218	Commercial Graphics	3	6	6
DES	116	Basic Photography (OR DES 107)	2	4	4
ART	107	Art History II	3	0	3

Fourth Quarter - Summer

		C	L	CH
	Technical Elective	4	2	4
	Technical Elective	4	2	4
ENG	Elective	3	0	3
SSC	Elective	3	0	3

Fifth Quarter - Fall

			C	L	CH
SSC/ENG		Elective	3	0	3
DES	210	Advertising & Publication Design I	3	0	3
DES	240	Production I	3	6	6
*DES	241	Production I	3	30	6
		Technical Elective	3	0	3

Sixth Quarter - Winter

			C	L	CH
SSC		Elective	3	0	3
DES	220	Advertising & Publication Design II	3	0	3
DES	242	Production II	3	6	6

*DES	243	Production II	3	30	6
DES	238	Case Studies	3	0	3

Seventh Quarter - Spring

			C	L	CH
DES	230	Advertising & Publication Design III	3	0	3
*DES	231	Advertising & Publication Design III	1	30	4
DES	244	Production III	3	6	6
*DES	249	Production III	3	30	6
DES	239	Professional Practices & Procedures	3	6	6
*DES	259	Professional Practices & Procedures	3	30	6

ELECTIVES - Refer to page 60

Four English courses and two Social Science courses are required of all art majors.

* Denotes Cooperative Work Program courses.

TECHNICAL ILLUSTRATION

Purpose

The purpose of the illustrator is to provide communication between engineers who design equipment and those who use or service the products. Illustrations may appear in industrial catalogs, aircraft handbooks, training aids, engineering designs and tooling problems, assembly sheets, and promotional literature. They are generally drawn by one of the axonometric or perspective methods and may show part details, cutaway views, exploded assemblies, or part installations.

As American industry has grown, technical illustrators have become more important in providing illustrations to solve a great number of problems in design, manufacturing, assembly, operation, and maintenance of technical equipment. By the use of an illustration which is normally superior to the spoken or written word, illustrators can convey the information necessary to give a clear and concise description of a complicated form.

Job Description

The technical illustrator has the ability to describe the shape, dimensions, assembly, and installation of an object. Information for illustrations is taken from blueprints, technical sheets, engineering sketches, photographs, or the actual parts. The technical illustrator must be able to visualize this technical data in three dimensions, judge what the best methods of presentation are, plan his layout, make an accurate drawing, and finish this drawing according to the commercial or military specifications to which he is working. In addition to being technically and artistically correct, the drawing must also be done within acceptable time limits.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter - Fall

			C	L	CH
ENG	101	Composition I	3	0	3
DES	110	Creative Problem Solving	3	0	3
DES	101	Basic Drawing & Design	4	8	8

Second Quarter - Winter

			C	L	CH
ENG	102	Composition II	3	0	3
DES	107	Life Drawing (OR DES 116)	2	4	4
DES	124	Type and Lettering	4	6	7
ART	106	Art History I	3	0	3

Third Quarter - Spring

			C	L	CH
DFT	102	Drafting For Art	3	6	6
DES	218	Commercial Graphics	3	6	6
DES	116	Basic Photography (OR DES 107)	2	4	4
ART	107	Art History II	3	0	3

Fourth Quarter - Summer

			C	L	CH
SSC		Elective	3	0	3
ENG		Elective	3	0	3
		Technical Elective	4	2	4
		Technical Elective	4	2	4

Fifth Quarter - Fall

			C	L	CH
DES	250	Technical Illustration I	3	6	6
		Technical Elective	4	2	4
SSC		Elective	3	0	3

Sixth Quarter - Winter

			C	L	CH
DES	251	Technical Illustration II	3	6	6
*DES	271	Technical Illustration II	3	30	6
		Elective	4	2	4
DES	245	Architectural Rendering I	3	3	4
*DES	272	Architectural Rendering I	3	10	4
MEC	101	Machine Processes	0	6	2

Seventh Quarter - Spring

			C	L	CH
DES	252	Technical Illustration III	3	6	6
*DES	273	Technical Illustration III	3	30	6
		Elective	4	2	4
DES	246	Architectural Rendering II	3	3	4
DES	274	Architectural Rendering II	3	10	4
DES	204	Descriptive Geometry	4	4	4

Electives - Refer to page 60

Four English courses and two Social Science courses are required of all art majors.

* Denotes Cooperative Work Program courses.

ELECTIVES — APPLIED ARTS

ENGLISH ELECTIVES

ENG	103	Report Writing	2	2	3
ENG	204	Oral Communication	3	0	3
ENG	206	Business Communication	3	0	3
ENG	208	Reading Enrichment	3	0	3
ENG	210	Advanced Writing	3	0	3
ENG	212	Journalism I	3	0	3
ENG	214	Copywriting I	3	0	3
ENG	216	Copywriting II	3	0	3

SOCIAL SCIENCE ELECTIVES

PSY	108	Psychology of Communications	3	0	3
POL	201	U. S. Government	3	0	3
PSY	112	Personality Development	3	0	3
PSY	206	Applied Psychology	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	203	Environmental Studies	3	0	3
SSC	205	American Institutions	3	0	3

TECHNICAL ELECTIVES

DES	108	Illustration	2	4	4
DES	203	Computer Graphics	3	0	3
DES	211	Three Dimensional Design	2	2	3
ART	231	Painting	2	6	5
ART	238	Selective Media I	2	7	4
ART	239	Selective Media II	2	4	4
ART	240	Metal Sculpturing	1	3	2
DES	205	Perspective I	2	4	4
DES	206	Perspective II	2	4	4
DES	207	Perspective III	2	4	4
DES	262	Technical Publications	2	3	3
DES	248	Air Brush	2	3	3
DES	245	Architectural Rendering I	2	3	3
AVT	103	Fimstrip Production	2	2	3
DES	246	Architectural Rendering II	2	3	3
DES	253	Technical Rendering I	2	4	4
DES	254	Technical Rendering II	2	4	4
DES	255	Technical Rendering III	2	4	4

Business Technologies

ACCOUNTING

Purpose of Curriculum

Accounting is one of the fastest growing employment fields in America today, and the job outlook for good accountants seems bright for many years to come. These opportunities result from the tremendous business and industrial expansion in all parts of the country. Because of this emphasis, there is a growing need for trained people in the area of accounting to help managers keep track of a firm's operation. The Accounting Curriculum is designed to fill this need by offering students the necessary accounting theories and skills for the entry into the accounting profession.

The specific objectives of the Accounting Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding of the fundamentals of accounting and analysis of financial statements.
3. Understanding and skill in effective communications for business.

Job Description

The duties and responsibilities of an accountant vary somewhat in different firms. Some of the things an accountant might do are: record transactions, render periodic reports, maintain cost records, make special reports, complete tax returns, audit the books, and advise management in areas of financial affairs.

The graduate of the Accounting Curriculum may qualify for various jobs in business and industry leading to any of the following accounting positions: accounting clerk, payroll clerk, accounting machine operator, auditor, and cost accountant. This training plus further experience should prepare them to become office managers, accounting supervisors, and to fill other responsible positions in a business firm.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
BUS	101	Introduction to Business	5	0	5
ENG	101	Composition I	3	0	3
MAT	110	Business Mathematics	5	0	5
BUS	110	Office Machines	2	3	3
BUS	115	Business Law	3	0	3
			18	3	19

Second Quarter			*C*	*L*	*CH*
BUS	102	Typewriting	2	3	3
ENG	102	Composition II	3	0	3
BUS	116	Business Law	3	0	3

ECO	102	Economics	3	0	3
BUS	120	Accounting I	5	2	6
			16	5	18

Third Quarter

			C	L	CH
ECO	104	Economics	3	0	3
BCS	121	Accounting II	5	2	6
ENG	204	Oral Communication	3	0	3
BUS	226	Payroll Records & Accounting	3	0	3
EDP	103	Introduction to Computer Concepts	4	0	4
			18	2	19

Fourth Quarter

			C	L	CH
BUS	222	Intermediate Accounting I	5	2	6
ENG	103	Report Writing	3	0	3
BUS	123	Finance	3	0	3
BUS	271	Office Management	3	0	3
		Business Elective	3	0	3
			17	2	18

Fifth Quarter

			C	L	CH
ENG	206	Business Communications	3	0	3
BUS	223	Intermediate Accounting II	5	2	6
BUS	229	Taxes I	2	2	3
		Social Science Elective	3	0	3
			13	4	15

Sixth Quarter

			C	L	CH
BUS	267	Auditing	3	2	4
BUS	225	Cost Accounting	3	2	4
		Business Elective	3	0	3
		Social Science Elective	3	0	3
BUS	230	Taxes II	3	0	3
			15	4	17

Business Electives
Free electives — May be chosen from the B.A. curriculum or the D.P. curriculum.

BANKING AND FINANCE

Purpose

Because of the constant increase in the number of banks and financial institutions in North Carolina, there is a definite need for professional knowledge of banking and financial matters. The quality of service rendered by the banking and financial institutions is dependent upon the quality of personnel employed. Therefore, the primary purpose of the Banking and Finance Curriculum is to provide students with the greatest flexibility in achieving educational objectives that are consistent with their particular endeavors and career goals in banking and finance. Furthermore, this curriculum intends to provide knowledges and skills needed for various banking functions.

The Banking and Finance Curriculum is designed to promote economic education as well as to make students aware of existing banking opportunities.

Job Description

An Associate Degree in Banking and Finance enables the graduate to qualify for many banking and financial institutional positions. Naturally different firms will vary in responsibilities and duties. The graduate of this curriculum may become a teller, loan officer, management trainee, account advisor, credit analyst, or branch manager.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition	3	0	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
ECO	102	Economics	2	3	3
SSC		Social Science Elective	2	2	3
			17	5	19

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition	3	0	3
ECO	104	Economics	3	0	3
BUS	115	Business Law	3	0	3
BUS	272	Supervision	4	0	4
BUS	110	Office Machines	2	3	3
			15	3	16

Third Quarter			*C*	*L*	*CH*
ENG	103	Report Writing	3	0	3
BUS	116	Business Law	2	2	3
EDP	103	Introduction to Data Processing	4	0	4
BUS	239	Marketing	5	0	5
**BUS	260	Government and Business	2	2	3
			16	4	18

Fourth Quarter			*C*	*L*	*CH*
AIB	120	Accounting I (Prerequisite MAT110)	4	0	4
AIB	214	Effective Speaking	4	0	4
AIB	209	Installment Credit	4	0	4
AIB	202	Principles of Bank Operations	4	0	4
		Social Science	4	0	4
			20	0	20

Fifth Quarter			*C*	*L*	*CH*
AIB	231	Savings and Time Deposit	4	0	4
*AIB	211	Federal Reserve	4	0	4
AIB	121	Accounting II (Prerequisite AIB 120)	4	0	4
AIB	206	Bank Letters and Reports	4	0	4
			16	0	16

Sixth Quarter

			C	L	CH
AIB	219	Credit Administration	4	0	4
AIB	210	Money and Banking	4	0	4
*AIB	205	Bank Management	4	0	4
*AIB	213	Trust Functions & Services (Prerequisite 115)	4	0	4
			16	0	16

* AIB 203, 207, 232, & 123 may be in lieu of AIB 211, 205, 213 for an A.A.S. Degree

** AIB 230 may be substituted for BUS 260

ELECTIVES FOR ASSOCIATE DEGREE

			C	L	CH
AIB	207	International Banking	4	0	4
AIB	203	Bank Investment	4	0	4
AIB	230	Argumentation and Debate	4	0	4
AIB	232	Agricultural Finance	4	0	4
AIB	123	Financing Business Enterprise	4	0	4
			20	2	21

SOCIAL SCIENCE ELECTIVES

			C	L	CH
POL	201	U.S. Government	3	0	3
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	203	Environmental Studies	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
PSY	213	Advanced Psychology	3	0	3

BUSINESS ADMINISTRATION

Purpose

In North Carolina the opportunities in business are increasing. With the increasing population and industrial development in this State, business has become more competitive and automated. Better opportunities in business will be filled by students with specialized education beyond the high school level. The Business Administration Curriculum is designed to prepare the student for employment in one of many occupations common to business. Training is aimed at preparing the student in many phases of administrative work that might be encountered in the average business.

The specific objectives of the Business Administration Curriculum are to develop the following competencies:

1. Understanding of the principles of organization and management in business operations.
2. Understanding our economy through study and analysis of the role of production and marketing.
3. Knowledge in specific elements of accounting, finance, and business law.

4. Understanding and skill in effective communication for business.
5. Knowledge of human relations as they apply to successful business operations in a rapidly expanding economy.

Job Description

The graduate of the Business Administration Curriculum may enter a variety of career opportunities from beginning sales person or office clerk to manager trainee. The duties and responsibilities of this graduate vary in different firms. These encompassments might include: making up and filing reports, tabulating and posting data in various books, sending out bills, checking calculations, adjusting complaints, operating various office machines, and assisting managers in supervising. Positions are available in businesses such as advertising; banking; credit; finance; retailing; wholesaling; hotel, tourist, and travel industry; insurance; transportation; and communications.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	115	Business Law	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
			18	3	19

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
		Business Elective	3	0	3
BUS	120	Accounting I	5	2	6
ECO	102	Economics	3	0	3
BUS	116	Business Law	3	0	3
			17	2	18

Third Quarter			*C*	*L*	*CH*
ENG	204	Oral Comminication	3	0	3
BUS	121	Accounting II	5	2	6
ECO	104	Economics	3	0	3
BUS	110	Office Machines	2	2	3
BUS	239	Marketing	5	0	5
			18	4	20

Fourth Quarter			*C*	*L*	*CH*
EDP	103	Introduction to Computer Concepts	4	0	4
ENG	103	Report Writing	2	2	3
BUS	123	Finance I	4	0	4
BUS	272	Supervision	3	0	3
		Business Elective	3	0	3
			16	2	17

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	243	Advertising	3	0	3
BUS	235	Business Management	3	0	3
BUS	229	Taxes I	2	2	3
		Social Science Elective	3	0	3
		Business Elective	3	0	3
			17	2	18

Sixth Quarter

			C	L	CH
BUS	230	Taxes II	3	0	3
BUS	271	Office Management	3	0	3
BUS	232	Sales	3	0	3
		Social Science Elective	3	0	3
		Business Elective	3	0	3
			15	0	15
		Total			106

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
BUS	101	Introduction to Business	5	0	5
ENG	101	Composition	3	0	3
ECO	102	Economics	3	0	3
			11	0	11

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
ECO	104	Economics	3	0	3
BUS	115	Business Law	3	0	3
		Business Elective	3	0	3
			12	0	12

Third Quarter

			C	L	CH
BUS	116	Business Law	3	0	3
MAT	110	Business Mathematics	5	0	5
ENG	204	Oral Communications	3	0	3
			11	0	11

Fourth Quarter

			C	L	CH
BUS	102	Typewriting I	2	3	3
BUS	123	Finance I	3	0	3
		Social Science Elective	3	0	3
			8	3	9

Fifth Quarter

			C	L	CH
BUS	120	Accounting	5	2	6
BUS	124	Finance II	3	0	3
ENG	206	Business Communication	3	0	3
			11	2	12

Sixth Quarter

			C	L	CH
BUS	121	Accounting	5	2	6
EDP	103S	Introduction to Computer Concepts	4	0	4
			9	2	10

Seventh Quarter

			C	L	CH
BUS	110	Office Machines	2	2	3
BUS	229	Taxes	3	2	4
			5	4	7

Eighth Quarter

			C	L	CH
BUS	243	Advertising	3	0	3
BUS	239	Marketing	5	0	5
			8	0	8

Ninth Quarter

			C	L	CH
BUS	232	Sales Development	3	0	3
BUS	272	Principles of Supervision	3	0	3
		Business Elective	3	0	3
			9	0	9

Tenth Quarter

			C	L	CH
BUS	271	Office Management	3	0	3
BUS	235	Business Management	3	0	3
		Social Science	3	0	3
		Business Elective	3	0	3
			12	0	12

Eleventh Quarter

			C	L	CH
		Business Elective	3	0	3
ENG	103	Report Writing	2	2	3
			5	2	6
		Total			107

ELECTIVES

Electives for the *Business Administration Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

MAJOR

			C	L	CH
BUS	247	Business Insurance	3	0	3
BUS	233	Personnel Management	3	0	3
BUS	245	Retailing	3	0	3
BUS	237	Wholesaling	3	0	3
BUS	217	Business Law	3	0	3
BUS	300	Current Trends in Business	2	3	3
BUS	112	Records Management	3	0	3
BUS	122	Accounting III	5	0	5
BUS	225	Cost Accounting	3	2	4
BUS	226	Payroll Records and Accounting	3	0	3
BUS	242	Sales Promotion	3	0	3
BUS	250	Real Estate	3	0	3

SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	206	Applied Psychology	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

BUSINESS DATA PROCESSING

Purpose

The processing of data by electronic equipment has created vast changes in business and industry. Nowhere are these changes more apparent than in the occupations associated with the handling of business information. Much of the routine and time-consuming work of obtaining, compiling and reporting the information necessary for a business to operate can now be adapted to machine processing.

This curriculum is designed to give the student (1) an understanding of the principles of business operation, (2) experience with techniques and handling business data, and (3) functional competence in the application of data processing systems, and experience in computer programming of business records and accounts, inventory, sales, and income and expenditures essential to business and to management decisions.

Emphasis is upon business data processing and use of machines in solving business problems.

Job Description

The business data processing specialist applies currently available programming techniques to a defined problem with minimum supervision. He analyzes and defines systems requirements to develop a program for electronic data processing; conducts detailed analyses of systems requirements, and develops all levels of block diagrams and logical flow charts. Translates program details into coded instructions; establishes test data; tests, refines, and revises program and documents the procedures. Ascertains if other combinations of instruction would achieve greater flexibility, better machine utilization, or more dependable results. He may prepare a complete set of operating instructions for use by a console operator; on occasion, operates the console in processing program.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
EDP	103	Introduction to Computer Concepts	4	0	4
MAT	101	Technical Mathematics	5	0	5
ENG	101	Composition I	3	0	3
ECO	102	Economics	3	0	3
			15	0	15

Second Quarter			*C*	*L*	*CH*
EDP	114	Compiler Language I	2	4	4
MAT	112	Business Mathematics	5	0	5
BUS	120	Accounting I	5	2	6
ENG	102	Composition II	3	0	3
			15	6	18

Third Quarter

			C	L	CH
EDP	116	Assembler Language	2	4	4
EDP	122	RPG Language	2	4	4
BUS	121	Accounting II	5	2	6
MAT	214	Statistics	5	0	5
			14	10	19

Fourth Quarter

			C	L	CH
EDP	118	Compiler Language II	2	4	4
EDP	211	Data Processing Application I	2	4	4
EDP	213	Computer Systems I	2	2	3
BUS	225	Cost Accounting	3	2	4
BUS	115	Business Law I	3	0	3
			12	12	18

Fifth Quarter

			C	L	CH
EDP	212	Data Processing Application II	2	4	4
EDP	214	Computer Systems II	2	2	3
ENG	103	Technical Report Writing	2	2	3
		Elective — DP	3	0	3
		Elective	3	0	3
			12	8	16

Sixth Quarter

			C	L	CH
EDP	218	Data Processing Project	1	8	5
BUS	272	Supervision	3	0	3
ENG	204	Oral Communication	3	0	3
		Elective — Social Science	3	0	3
		Elective	3	0	3
			13	8	17
		Total			103

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
EDP	103	Introduction to Computer Concepts	4	0	4
ENG	101	Composition I	3	0	3
ECO	102	Economics	3	0	3
			10	0	10

Second Quarter

			C	L	CH
EDP	114	Compiler Language I	2	4	4
MAT	101	Technical Mathematics	5	0	5
			7	4	9

Third Quarter

			C	L	CH
EDP	116	Assembler Language	2	4	4
MAT	112	Business Mathematics	5	0	5
			7	4	9

Fourth Quarter

			C	L	CH
EDP	122	RPG Language	2	4	4
MAT	214	Statistics	5	0	5
			7	4	9

Fifth Quarter

			C	L	CH
EDP	118	Compiler Language II	2	4	4
BUS	120	Accounting I	5	2	6
			7	6	10

Sixth Quarter

			C	L	CH
EDP	213	Computer Systems I	2	2	3
BUS	121	Accounting II	5	2	6
			7	4	9

Seventh Quarter

			C	L	CH
EDP	214	Computer Systems II	2	2	3
BUS	225	Cost Accounting	3	2	4
			5	4	7

Eighth Quarter

			C	L	CH
EDP	211	Data Processing Application I	2	4	4
ENG	102	Composition II	3	0	3
		Social Science Elective	3	0	3
			8	4	10

Ninth Quarter

			C	L	CH
EDP	212	Data Processing Application II	2	4	4
BUS	272	Supervision	5	0	3
ENG	103	Technical Report Writing	2	2	3
			9	6	10

Tenth Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	115	Business Law	3	0	3
		Elective — D.P.	3	0	3
		Elective	3	0	3
			12	0	12

Eleventh Quarter

			C	L	CH
EDP	218	Data Processing Project	1	8	5
		Elective	3	0	3
			4	8	8
		Total			103

ELECTIVES

Electives for the *Business Data Processing Curriculum* may be selected according to the needs of the student. The school may determine which of these are to be offered in any given quarter of the program.

SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

EXECUTIVE SECRETARY

Purpose

The Executive Secretarial curriculum offers a program which prepares students to assume responsible positions in the secretarial profession. Thorough training is provided in shorthand and typewritten techniques and operation of office machines. Understanding of business organization and economic principles is developed. The program provides the proper balance between skill development and general knowledge necessary for the development of the professional individual qualifications required for success in the business world.

Job Description

The graduate of the Executive Secretarial curriculum can qualify for executive secretarial positions in manufacturing, wholesale, retail, and government offices. In addition to taking dictation and transcribing the secretary performs a variety of duties in the office. In addition to stenographic work the secretary relieves employers of routine duties, frequently handling a variety of business details on her own initiative. She meets important people and usually has her own private office. A good secretary is always in demand.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand I	3	2	4
			18	5	20

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3	3
BUS	107	Shorthand II	3	2	4
BUS	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

Third Quarter			*C*	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3	3
BUS	108	Shorthand III	3	2	4
BUS	111	Secretarial Office Machines	2	2	3
BUS	115	Business Law	3	0	3
			13	7	16

Fourth Quarter			*C*	*L*	*CH*
ENG	103	Report Writing	2	2	3
BUS	206	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3	3

EDP	103	Concepts of Data Processing	4	0	4
		Elective	3	0	3
			14	7	17

Fifth Quarter

			C	*L*	*CH*
ENG	206	Business Communication	3	0	3
BUS	207	Dictation and Transcription	3	2	4
BUS	214	Secretarial Procedures I	3	2	4
BUS	112	Records Management I	3	0	3
		Social Science Elective	3	0	3
		Elective	3	0	3
			18	4	20

Sixth Quarter

			C	*L*	*CH*
BUS	208	Dictation and Transcription	3	2	4
BUS	274	Secretarial Procedures II	3	2	4
BUS	211	Advanced Office Machines	2	2	3
BUS	113	Records Management II	3	0	3
		Elective	3	0	3
			14	6	17
		Total			109

ELECTIVES

Electives for the *Technical Secretarial Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL SECRETARY

			C	*L*	*CH*
BUS	134	Personality Development	3	0	3
ECO	102	Economics	3	0	3
BUS	215	Office Application	6	0	6
ECO	108	Consumer Economics	3	0	3
BUS	116	Business Law	3	0	3
BUS	105	Typing Office Production	2	3	3

SOCIAL SCIENCE

			C	*L*	*CH*
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

GENERAL OFFICE TECHNOLOGY

Purpose

More people are now employed in clerical occupations than in any other single job category. Automation and increased production will mean that these people will need more technical skills and a greater adaptability for diversified types of jobs.

The curriculum is designed to develop the necessary variety of skills for employment in the business world. Specialized training in skill areas is supplemented by related courses in mathematics, accounting, business law, and applied psychology.

Job Description

The graduate of the General Office Technology curriculum may be employed as an administrative assistant, accounting clerk, assistant office manager, bookkeeper, file clerk, machine transcriptionist, or a variety of other clerical-related jobs. Positions are available in almost every type of business, large or small.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
ECO	102	Economics	3	0	3
			18	3	19

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3	3
BUS	130	Secretarial Accounting	5	2	6
BUS	115	Business Law	3	0	3
BUS	112	Records Management I	3	0	3
			16	5	18

Third Quarter			*C*	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3	3
BUS	116	Business Law	3	0	3
BUS	111	Secretarial Office Machines	2	2	3
BUS	212	Machine Transcription	2	2	3
BUS	113	Records Management II	3	0	3
			15	7	18

Fourth Quarter			*C*	*L*	*CH*
ENG	103	Report Writing	2	2	3
EDP	103S	Concepts of Data Processing	4	0	4
BUS	205	Advanced Typewriting	2	3	3
BUS	213	Machine Transcription	2	2	3
BUS	232	Sales Development	3	0	3
		Business Elective	3	0	3
			16	7	19

Fifth Quarter			*C*	*L*	*CH*
ENG	206	Business Communication	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
		Social Science Elective	3	0	3
		Business Elective	6	0	6
			15	2	16

Sixth Quarter

			C	L	CH
BUS	211	Advanced Office Machines	2	2	3
BUS	272	Supervision	3	0	3
BUS	274	Secretarial Procedures II	3	2	4
BUS	105S	Typewriting Office Practice	2	3	3
		Business Elective	3	0	3
		Social Science Elective	3	0	3
			16	7	19
		Total			109

SUGGESTED CURRICULUM BY QUARTERS FOR EVENING CLASSES

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
ECO	102	Economics	3	0°	3
			8	3	9

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3°	3
BUS	115	Business Law	3	0	3

Third Quarter

			C	L	CH
BUS	116	Business Law	3	0	3
NEG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
			8	3	9

Fourth Quarter

			C	L	CH
BUS	112	Records Management I	3	0	3
BUS	205	Advanced Typewriting	2	3°	3
ENG	103	Report Writing	2	2	3
			7	5	9

Fifth Quarter

			C	L	CH
BUS	113	Records Management II	3	0	3
BUS	101	Introduction to Business	5	0	5
		Business Elective	3	0	3
			11	0	11

Sixth Quarter

			C	L	CH
MAT	110	Business Mathematics	5	0	5
EDP	103S	Introduction to Computer Concepts	4	0	4
			9	0	9

Seventh Quarter

			C	L	CH
BUS	130	Secretarial Accounting	5	2	6
BUS	212	Machine Transcription	2	2	3
			7	4	9

Eighth Quarter			*C*	*L*	*CH*
BUS	213	Machine Transcription	2	2	3
BUS	111	Secretarial Office Machines	2	2	3
			4	4	6

Ninth Quarter			*C*	*L*	*CH*
BUS	211	Advanced Office Machines	2	2	3
BUS	232	Sales Development	3	0	3
BUS	272	Principles of Supervision	3	0	3
			8	2	9

Tenth Quarter			*C*	*L*	*CH*
PSY	112	Personality Development (or business elective)	3	0	3
ENG	206	Business Communication	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
		Social Science Elective	3	0	3
			12	2	13

Eleventh Quarter			*C*	*L*	*CH*
PSY	206	Applied Psychology (or social science elective)	3	0	3
BUS	226S	Payroll Records and Accounting (or business elective)	3	0	3
		Business Elective	3	0	3
			9	0	9

Twelfth Quarter			*C*	*L*	*CH*
BUS	274	Secretarial Procedures II	3	2	4
BUS	105S	Typing Office Production	2	3	3
			5	5	7
		Total			109

ELECTIVES

Electives for the *General Office Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

BUS	247	Business Insurance	3	0	3
BUS	245	Retailing	3	0	3
BUS	217	Business Law	3	0	3
BUS	215	Office Application	6	0	6
BUS	134	Personality Development	3	0	3
BUS	216	Office Reception Techniques	3	0	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

INDUSTRIAL MANAGEMENT

Purpose of Curriculum

Industry's needs in positions of supervision and mid-management have grown extensively with the development of new methods of manufacturing and with the increase in the national economy. This need has added emphasis to the necessity for well-trained individuals that can understand new methods and keep abreast of trends in the economy. The supervisor and persons in mid-management must be concerned daily with human behavior and the psychological factors which affect personnel working under their direction. They must also be conscious of the responsibilities of their position toward the total economic well being of the industry.

These requirements have set forth the objectives in developing this program to prepare people for supervisory and mid-management responsibilities in industry.

The program is prepared to develop the individual's abilities in the art of communicating with his fellow worker by providing him with training in business and industrial management, psychology, production methods, and the general and social education that broadens one's perspective. This training should provide one with the opportunity to enter into an industrial occupation and, with experience, assume the responsibilities that go with supervisory and mid-management positions in industry.

Job Description

The supervisor or foreman coordinates the activities of workers in one or more occupations. His duties may encompass interpreting company policies to workers, planning production schedules and estimating man-hour requirements for job completion, establishing or adjusting work procedures, analyzing and resolving work problems, and initiating or suggesting plans to motivate workers to achieve work goals.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
ENG	101	Composition I	3	0	3
MAT	110	Business Math	5	0	5
BUS	101	Introduction to Business	5	0	5
ECO	102	Principles of Economics I	3	0	3
ISC	120	Principles of Industrial Management	3	2	4
			19	2	20

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
ECO	104	Principles of Economics II	3	0	3
BUS	123	Business Finance	4	0	4

PSY	206	Applied Psychology	3	0	3
ISC	210	Job Analysis and Evaluation	3	2	4
BUS	115	Business Law I	3	0	3
			19	2	20

Third Quarter

			C	L	CH
ENG	103	Report Writing	2	2	3
BUS	239	Marketing	5	0	5
ISC	211	Work Measurement	3	2	4
BUS	116	Business Law II	3	0	3
BUS	272	Principles of Supervision	3	0	3
			16	4	18

Fourth Quarter

			C	L	CH
ENG	204	Oral Communications	3	0	3
MEC	213	Production Planning	3	3	3
ISC	102	Industrial Safety	3	0	3
		Management Elective	3	0	3
BUS	120	Accounting I	5	2	6
			17	5	18

Fifth Quarter

			C	L	CH
ISC	202	Quality Control	3	2	4
ECO	201	Labor Economics	3	0	3
		Social Science Elective	3	0	3
		Business Eclectve	3	0	3
		Management Elective	3	0	3
			15	2	16

Sixth Quarter

			C	L	CH
BUS	235	Business Management	3	0	3
ISC	204	Value Analysis	3	0	3
ISC	209	Plant Layout	3	2	4
		Social Science Elective	3	0	3
		Management Elective	3	0	3
			15	2	16

TOTAL 108

ELECTIVES

			C	L	CH
BUS	232	Sales Development	3	0	3
BUS	243	Advertising	3	0	3
BUS	245	Retailing	3	0	3
BUS	244	Purchasing	3	0	3
BUS	233	Personnel Management	3	0	3
ISC	207	Foremanship Supervision	3	0	3
ENG	206	Business Communication	3	0	3
		Typing			

SOCIAL SCIENCES

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
SSC	205	American Institution	3	0	3
POL	201	U.S. Government	3	0	3

LEGAL SECRETARY

Purpose

The purpose of the Legal Secretarial curriculum is to outline a training program that will provide specialized training in the accepted procedures required by the legal profession and to enable persons to become proficient soon after accepting employment in the legal office.

The objectives of the Legal Secretarial curriculum are to develop the following competencies for employment in the legal office:

1. Skill in typing, dictation, transcription, legal terminology, and the preparation of legal papers and reports.
2. Special training in accounting, business mathematics, business law, and office machines.
3. Understanding and skill in the effective use of communications, human relations and personality, and social science in legal functions.

Job Description

The graduate of the Legal Secretarial curriculum should have a knowledge of legal terminology, skill in dictation, and accurate transcription of legal records, reports, letters, and documents. The duties of a legal secretary may consist of: taking dictation and transcribing letters, memoranda, and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments.Opportunities for employment of the graduate exist in a variety of secretarial positions in the legal profession such as in lawyers' offices and state and government offices.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand I	5	0	5
			20	3	21

Second Quarter

			C	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3	3
BUS	107	Shorthand II	3	2	4
BUS	130	Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3	3
BUS	108	Shorthand III	3	2	4
BUS	111	Secretarial Office Machines	2	2	3
BUS	112	Records Management	5	0	5
BUS	115	Business Law I	3	0	3
			18	7	21

Fourth Quarter

			C	L	CH
BUS	212	Machine Transcription I	2	2	3
BUS	206L	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3	3
EDP	103	Concepts of Data Processing	4	0	4
BUS	116	Business Law II	3	0	3
			14	7	17

Fifth Quarter

			C	L	CH
ENG	206	Business Communication	3	0	3
BUS	207L	Dictation and Transcription	3	2	4
BUS	214	Secretarial Procedures	3	2	4
		Business Elective	3	0	3
		Social Science Elective	3	0	3
			15	4	17

Sixth Quarter

			C	L	CH
BUS	208L	Dictation and Transcription	3	2	4
BUS	274	Secretarial Procedures	3	2	4
BUS	211	Advanced Office Machines	2	2	3
BUS	183L	Terminology and Vocabulary	3	0	3
BUS	105L	Legal Production Typing	2	3	3
			13	9	17

ELECTIVES

BUSINESS

			C	L	CH
BUS	217	Business Law III	3	0	3
BUS	134	Personality Development	3	0	3
ECO	102	Economics	3	0	3
ECO	108	Consumer Economics	3	0	3
BUS	121	Accounting II	5	2	6
BUS	226	Payroll Records and Accounting	3	0	3

SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

MEDICAL SECRETARY

Purpose

The demand for better qualified medical secretaries in our ever-expanding medical profession is becoming more acute. The purpose of this curriculum is to outline a training program that will provide specialized training in the accepted procedures required by the medical profession, and to enable persons to become proficient soon after accepting employment in the medical and health occupations.

The Medical Secretary Curriculum is designed to offer the students the necessary secretarial skills in typing, dictation, transcription, and terminology for employment in the medical profession. The special training in secretarial subjects is supplemented by related courses in mathematics, accounting, business law, and personality development.

Job Description

The graduate of the Medical Secretary Curriculum should have a knowledge of medical terminology, skill in dictation and accurate transcription of medical records, reports and letters. The duties of a medical secretary may consist of: taking dictation and transcribing letters, memoranda and reports, meeting office callers and screening telephone calls, filing, and scheduling appointments. The graduate may enter a secretarial position in a variety of offices such as physicians', private and public hospitals, federal and state health programs, and the drug and pharmaceutical industry.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
ENG	101	Composition I	3	0	3
BUS	102	Typewriting I	2	3°	3
MAT	110	Business Mathematics	5	0	5
BUS	101	Introduction to Business	5	0	5
BUS	106	Shorthand I	3	2	4
			18	5	20

Second Quarter

			C	*L*	*CH*
ENG	102	Composition II	3	0	3
BUS	103	Typewriting II	2	3°	3
BUS	107	Shorthand II	3	2	4
BUS	130	Secretarial Accounting	5	2	6
		Social Science Elective	3	0	3
			16	7	19

Third Quarter

			C	*L*	*CH*
ENG	204	Oral Communication	3	0	3
BUS	104	Typewriting III	2	3°	3
BUS	108	Shorthand III	3	2	4
BUS	111	Secretarial Office Machines	2	2	3
BUS	183	Terminology and Vocabulary	3	0	3
			13	7	16

Fourth Quarter			*C*	*L*	*CH*
ENG	103	Report Writing	2	2	3
BUS	206M	Dictation and Transcription	3	2	4
BUS	205	Advanced Typewriting	2	3°	3
BUS	284	Terminology and Vocabulary	3	0	3
EDP	103S	Concepts of Data Processing	4	0	4
			14	7	17

Fifth Quarter			*C*	*L*	*CH*
ENG	206	Business Communication	3	0	3
BUS	207M	Dictation and Transcription	3	2	4
BUS	115	Business Law	3	0	3
BUS	214	Secretarial Procedures I	3	2	4
BUS	112	Records Management I	3	0	3
		Social Science Elective	3	0	3
			18	4	20

Sixth Quarter			*C*	*L*	*CH*
BUS	208	Dictation and Transcription	3	2	4
BUS	274	Secretarial Procedures II	3	2	4
BUS	211	Advanced Office Machines	2	2	3
BUS	113	Records Management II	3	0	3
		Elective	3	0	3
			14	6	17
		Total			112

ELECTIVES

Electives for the *Medical Secretarial Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

MAJOR

			C	*L*	*CH*
BUS	215M	Office Application	6	0	6
ECO	108	Consumer Economics	3	0	3
ECO	102	Economics	3	0	3
BUS	134	Personality Development	3	0	3
BUS	116	Business Law	3	0	3
BUS	105S	Typing Office Production	2	3	3

SOCIAL SCIENCE

			C	*L*	*CH*
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

Engineering Technology

CHEMICAL TECHNOLOGY

Purpose

Chemical technicians may be thought of as practical laboratory technicians. The program of instruction in this curriculum is designed to educate students in basic chemistry, mathematics and technical communications. Technical knowledge and laboratory techniques are emphasized and a relationship between the theoretical and practical is maintained.

The curriculum objectives are to prepare persons to serve three distinct roles: (1) research assistant to a chemist in the laboratory; (2) planning and production assistant to chemical engineers in converting the research chemist's discoveries into actual industrial production; and (3) quality control technicians. Research laboratory assistants must be well grounded in chemical analysis, testing and synthesis. Chemical planning and production assistants must have command of a basic knowledge of chemical processing and ability to use main types of instruments, equipment and machinery for making chemical products. Quality control technicians should be able to use their basic knowledge to make tests to determine if raw materials and production follow desired specifications.

Job Description

Chemical technicians work for private industries, for the government or in university or hospital research centers. Duties of the chemical technician vary, depending on the organization for whom they work, the area they specialize in, and the projects on which they work. They use their basic knowledge and highly developed laboratory skills to carry out or assist with experiments, tests, and procedures which result from the more abstract work and thinking of chemists and chemical engineers.

They may be employed in analytical laboratories, where they work with complex substances, determining what quantities and combinations of chemical elements and compounds they may contain. They may also be employed in industry to perform tests during large-scale factory production of chemical products. Technicians may perform many of the chemical and mechanical procedures that help the industrial engineer to translate laboratory experiments into factory techniques capable of large quantity production. The chemical technician prepares laboratory test reports, checks analyses with specifications, and consults with laboratory supervisors. This field offers opportunities to women as well as men. The long range outlook for Chemical Technicians is excellent.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
MAT	101	Technical Math	5	0	5

DFT	101	Technical Drafting	2	4	3
CHM	111	General Chemistry I	4	3	5
EDP	103	Introduction to Computer Concepts	4	0	4
			18	7	20

Second Quarter

			C	L	CH
ENG	102	Composition II	3	0	3
MAT	102	Technical Math	5	0	5
PHY	101	Properties of Matter	3	2	4
ELC	101	Fundamentals of Electricity	4	4	6
		Social Science Elective	3	0	3
			18	6	21

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
MAT	103	Technical Math	5	0	5
PHY	102	Work Energy and Power	3	2	4
DFT	102	Technical Drafting	2	4	3
		Social Science Elective	3	0	3
			16	6	18

Fourth Quarter

			C	L	CH
CHM	112	General Chemistry	6	4	8
CHM	250	Qualitative Analysis	4	4	6
PHY	104	Light and Sound	3	2	4
			13	10	18

Fifth Quarter

			C	L	CH
CHM	121	Quanitative Analysis I	3	6	5
CHM	231	Organic Chemistry I	3	6	5
CHM	227	Physical Chemistry	3	2	4
			9	14	14

Sixth Quarter

			C	L	CH
CHM	222	Quantitative Analysis II	2	9	5
CHM	232	Organic Chemistry II	3	6	5
CHM	241	Industrial Chem. Analysis I	2	6	4
			7	21	14

Seventh Quarter

			C	L	CH
CHM	233	Organic Chemistry III	3	6	5
CHM	242	Industrial Chem. Analysis II	3	12	7
ENG	103	Report Writing	2	2	3
			8	20	15
		Total			120

ELECTIVES

Electives for the Chemical Technology Curriculum may be selected form the following courses. The school may determine which of these are to be offered in any given quarter of the program.

TECHNICAL

			C	L	CH
MEC	116	Engineering Materials	3	0	3
MAT	201	Technical Mathematics	5	0	5

MAT	219	Differential Equations	5	0	5
PHY	231	Fluid Mechanics	3	0	3
CHM	252	Chemistry of Living Systems	3	2	4

SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
ISC	201	Industrial Organization and Management	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

COOPERATIVE OPTION

During the sixth and seventh quarter the chemical technology student may elect to earn part of his credit for Chem 241 and 242 (Industrial Chemical Analysis I & II) by working one-half day in an industrial chemistry lab for on-the-job training. Enrollment in this option will be limited by the availability of jobs and number of students desiring this option.

DRAFTING & DESIGN TECHNOLOGY

Accredited by the Engineer's Council for Professional Development

Purpose

This curriculum guide was prepared for the purpose of outlining a training program for students of mechanical drafting and design technology. There are certain identifiable duties which are common to all technicians of this general classification and which comprise the basic areas of technical knowledge they need. This curriculum has been designed for training persons in the accepted performance of these basic duties that will be assigned, and to enable the individual student to become proficient in a short time after he becomes employed in the industry.

Courses in general education have been included to give a student the assurance and understanding that comes with education upon a broad base. The technician associates with many levels of thought and expression — administrative personnel, scientists, engineers, skilled workmen — and must be able to communicate effectively with all levels. Courses containing essential information from related subject areas, such as mathematics, physics, and mechanics have been included in order to provide the student a better academic base for his training. Emphasis is placed upon ability to think and plan, as well as drafting procedures and techniques.

Job Description

Mechanical drafting and design technicians are concerned with the preparation of drawings for design proposals, for experimental models and items for production use.

These technicians perform many aspects of drafting in a specialized field, such as the developing of the drawing of a section, sub-assembly or major component. Investigating design factors and availability of material and equipment, production methods and facilities are frequent assignments. They assist in the design of units and controls from specifications by utilizing drawings of existing units and reports on functional performance. They may draw components in industrial fields based on engineers original design concepts or specific ideas. Also, they may be assigned as coordinators for the execution of related work of other design, production, tooling, material and planning groups. Technicians with experience in this classification may often supervise the preparation of working drawings.

These technicians are employed in many types of manufacturing, fabrication, research development and service industries. Substantial numbers also are employed in communications, transportation, public utilities, consulting engineering firms, and federal, state, and local governments.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
CHM	111	General Chemistry	4	3	5
ENG	101	Composition I	3	0	3
DFT	101	Technical Drafting	2	4	3
MAT	101	Technical Mathematics	5	0	5
MEC	101	Machine Processes	0	6	2
			14	13	18

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
MAT	102	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
			15	6	18

Third Quarter			*C*	*L*	*CH*
MEC	102	Machine Processes	0	6°	2
ENG	204	Oral Communication	3	0	3
DFT	102	Technical Drafting	2	4	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Work, Energy & Power	3	2	4
			13	12	17

Fourth Quarter			*C*	*L*	*CH*
PHY	104	Light & Sound	3	2	4
ENG	103	Report Writing	2	2	3
DFT	103	Technical Drafting	1	6	3
PHY	106	Applied Mechanics	5	0	5
MEC	210	Physical Metallurgy	3	3	4
			14	13	19

Fifth Quarter			*C*	*L*	*CH*
DFT	201	Technical Drafting	2	6	4
DFT	204	Descriptive Geometry	2	4	4
MEC	205	Strength of Materials	3	2	4
MEC	211	Physical Metallurgy	3	3	4
			10	15	16

Sixth Quarter			*C*	*L*	*CH*
DFT	205	Design Drafting I	2	6	4
DFT	211	Mechanisms	3	2	4
		Social Science Elective	3	0	3
EDP	103	Introduction to Computer Concepts	4	0	4
			12	8	15

Seventh Quarter			*C*	*L*	*CH*
DFT	206	Design Drafting II	2	6	4
MEC	235	Hydraulics & Pneumatics	3	3	4
		Technical Elective	0	0	4
		Technical Elective	0	0	4
		Social Science Elective	3	0	3
			8	9	19
		Total			122

ELECTIVES

Electives for the *Drafting & Design Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

			C	*L*	*CH*
DFT	212	Jig and Fixture Design	2	6	4
MEC	237	Control Systems	2	4	4
ISC	201	Industrial Organization and Management	3	0	3
DES	240	Senior Project	2	6	4

SOCIAL SCIENCE

			C	*L*	*CH*
SSC	203	Environmental Studies	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3

ELECTRONICS ENGINEERING TECHNOLOGY

Accredited by the Engineer's Council for Professional Development

Purpose

The field of electronics has developed at a rapid pace since the turn of the century. For many years the major concern of electronics was in the area of communications. Developments during

World War II and in the period since have revolutionized production techniques. New industries have been established to supplement the need and demand for electronics equipment.

Many opportunities exist for men and women with a technical education in electronics. This curriculum provides a basic background in electronic related theory with practical applications of electronics for business and industry. Courses are designed to develop competent electronics technicians who may take their place as an assistant to an engineer, or as a liasion between the engineer and the skilled craftsman.

Job Description

The electronics technician may start in one or more of the following areas: research, design, development, production, maintenance or sales. He may be an assistant to an engineer, an engineering aide, laboratory technician, supervisor or equipment specialist. His training is similar to that of an engineer, but in less depth and more practical in application. He can function as a liaison between an engineer and the skilled craftsman.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition I	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
EDP	103	Introduction to Computer Concepts	4	0	4
MAT	101	Technical Mathematics	5	0	5
MEC	101	Machine Processes	0	6	2
			16	10	20

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
CHM	111	General Chemistry	4	3	5
DFT	101	Technical Drafting	2	4	3
MAT	102	Technical Mathematics	5	0	5
PHY	101	Properties of Matter	3	2	4
			17	9	20

Third Quarter			*C*	*L*	*CH*
ENG	204	Oral Communication	3	0	3
ELC	102	Fundamentals of Electricity	4	6	6
DFT	102	Technical Drafting	2	4	3
MAT	103	Technical Mathematics	5	0	5
PHY	102	Work, Energy & Power	3	2	4
			17	12	21

Fourth Quarter			*C*	*L*	*CH*
ENG	103	Report Writing	2	2	3
ELN	101	Electronic Instruments and Measurements	1	6	3
ELN	105	Control Devices	5	6	7
PHY	104	Light & Sound	3	2	4
			11	16	17

Fifth Quarter			*C*	*L*	*CH*
ELN	205	Applications of Vacuum Tubes and Transistors	5	6°	7
ELN	214	Wave Shaping & Pulse Circuits	2	3°	3
MAT	201	Technical Mathematics	5	0	5
ELN	210	Semiconductor Circuit Analysis	5	3°	6
			17	12	21

Sixth Quarter			*C*	*L*	*CH*
ELN	215	Wave Shaping & Pulse Circuits	2	3°	3
ELN	208	Integrated Circuits	1	6	4
		Social Science Elective	3	0	3
		Technical Elective	6	0	6
			12	9	16

Seventh Quarter			*C*	*L*	*CH*
ELN	245	Electronic Design Project	0	4	2
ELN	227	UHF & Microwave Systems	5	4	7
ELN	240	Digital Computers	3	2	4
		Social Science Elective	3	0	3
		Technical Elective	5	0	5
			16	10	21
		Total			136

ELECTIVES

Electives for the *Electronics Technology Curriculum* may be selected from the following courses. The school will determine which of those are to be offered in any given quarter of the program.

TECHNICAL

			C	L	CH
ELN	220	Electronic Systems	5	6	7
ELN	230	Television Systems	4	6	7
MAT	208	Calculus & Laplace Transform for Electronics	5	0	5
MAT	214	Statistics	5	0	5
MAT	230	Boolean Algebra with Computer Applications	4	2	5

SOCIAL SCIENCE

			C	L	CH
SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	202	United States Government	3	0	3
PSY	213	Advanced Psychology	3	0	3
SSC	203	Environmental Studies	3	0	3

INDUSTRIAL ENGINEERING TECHNOLOGY

Purpose

The Industrial Engineering Technician is trained in the planning, functioning and controlling of the operation of an industrial enterprise for its profitable and continued operation.

New firms moving into North Carolina and established firms expanding their facilities in recent years have created increased demands for personnel at all levels of production.

Of particular significance as determined by the Employment Security Commission of North Carolina is the need for over 2000 technicians trained in Industrial Engineering, Quality Control and Production Planning.

A graduate of the Industrial Engineering Technology curriculum should have a basic knowledge of engineering at the technology level with specific skills in performing industrial engineering functions.

This, with the probable in-plant training of a particular company, should make the graduate a valuable employee in any one of the several thousand firms in North Carolina alone.

Job Description

The Industrial Engineering Technician studies and records time, motion, methods, nad speed involved in performance of maintenance, production, clerical, and other work operations to establish standard production rate and to improve efficiency. Prepares charts, graphs, and diagrams to illustrate work flow, routing, floor layouts, material handling, and machine utilization. Observes workers operating equipment or performing tasks to determine time involved and fatigue rate, using stop watch, motion-picture camera, electrical recorder, and similar equipment. Recommends revision of methods of operation or material handling, alterations in equipment layout or other changes to increase production or improve standards. Aids in planning work assignments in accordance with worker performance, machine capacity, production schedules, and anticipated delays. May be designated according to type of studies analyzed as Methods-Study Analyst; Motion-Study Analyst; Time-Study Analyst 1.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			C	L	CH
ENG	101	Composition I	3	0	3
DFT	101	Technical Drafting	2	4	3
MAT	101	Technical Math	5	0	5
CHM	111	General Chemistry	4	3	5
EDP	103	Introduction to Computer Concepts	4	0	4
			18	7	20

Second Quarter			C	L	CH
ENG	102	Composition II	3	0	3
ELC	101	Fundamentals of Electricity	4	4	6
MAT	102	Technical Math	5	0	5
PHY	101	Property of Matter	3	2	4
		Social Science Elective	3	0	3
			16	8	21

Third Quarter

			C	L	CH
ENG	204	Oral Communication	3	0	3
PHY	102	Work, Energy Power	3	2	4
MAT	103	Technical Math	5	0	5
DFT	102	Technical Drafting	2	4	3
		Social Science Elective	3	0	3
			16	6	18

Fourth Quarter

			C	L	CH
MEC	111	Manufacturing Processes	3	3	4
ISC	102	Industrial Safety	3	0	3
ISC	120	Principles of Industrial Management	3	2	4
BUS	123	Business Finance I	3	0	3
ISC	231	Manufacturing Cycles	5	0	5
			17	5	19

Fifth Quarter

			C	L	CH
MEC	112	Manufacturing Processes	3	3	4
ISC	202	Quality Control	3	2	4
ISC	210	Job Analysis and Evaluation	3	2	4
MEC	213	Production Planning	3	3	4
			12	10	16

Sixth Quarter

			C	L	CH
ISC	209	Plant Layout	3	2	4
ISC	211	Work Measurement	3	2	4
ISC	220	Management Problems	3	0	3
ENG	103	Report Writing	2	2	4
ECO	102	Economics	3	0	3
			14	6	18

Seventh Quarter

			C	L	CH
ISC	204	Value Analysis	3	0	3
ISC	240	Applied Problem in Industrial Management	3	6	5
		Technical Elective	2	2	4
		Technical Elective	3	3	4
			11	11	16
		Total			138

ELECTIVES

TECHNICAL

			C	L	CH
EDP	114	Compiler Language	2	2	4
MEC	235	Hydraulics and Pneumatics	3	3	4
MEC	237	Control Systems	2	4	4

SOCIAL SCIENCE

			C	L	CH
SSC	203	Environmental Studies	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
PSY	213	Advanced Psychology	3	0	3
POL	101	U.S. Government	3	0	3

Industrial Engineering Textile Option

In order to afford textile midmanagement and supervisory personnel an opportunity for a program in line with their particular needs, the following course substitutions have been provided in the Industrial Engineering Curriculum.

			C	L	CH
ISC	110	Textile Manufacturing, Dyeing & Finishing I	3	0	3
ISC	111	Textile Manufacturing, Dyeing & Finishing II	3	0	3
ISC	115	Intermediate Textile Manufacturing, Dyeing & Finishing	3	0	3
ISC	116	Advanced Textile Manufacturing, Dyeing & Finishing	3	0	3
ISC	130	Instruments for Fiber & Fabric Processing Efficiency I	3	0	3
ISC	131	Instruments for Fiber & Fabric Processing Efficiency II	3	0	3
ISC	135	Environmental Instrumentation to meet OSHA Industrial Standards I	3	0	3
ISC	136	Environmental Instrumentation to meet OSHA Industrial Standards II	3	0	3
MAT	214	Statistics	5	0	5

The above courses substitute for:

MEC 213
MEC 231
ISC 211
ISC 102
MAT 103
Technical Elective
Technical Elective

NUCLEAR ENGINEERING TECHNOLOGY
HEALTH PHYSICS TECHNOLOGY

The Nuclear Engineering Technology and Health Physics Technology programs will lead to an associate degree in applied science. The eight-quarter program will include five quarters at TIA, two quarters of on-the-job training (with pay) and a final quarter of specialized laboratory/lecture training on the campus of one of the North Carolina universities. Present plans are to offer training in these technologies beginning in the fall of 1975.

Purpose

Study in the field of Nuclear Engineering Technology or Health Physics Technology provides graduates with the necessary theory, laboratory experiences, and on-the-job training to become nuclear technicians in a variety of job opportunities. The jobs are directly or indirectly associated with the research, manufacture, and use of equipment and materials involved with the rapidly growing field of nuclear science and nuclear energy.

Job Description

The duties of the Nuclear Engineering Technician and the Health Physics Technician are varied. In general, these technicians directly or indirectly support scientists and engineers in development, manufacture, test, operation and maintenance of equipment such as nuclear reactors and radiation safety monitoring equipment. Duties also include the handling of radioactive materials and radioactive waste disposal. Jobs may be with industries such as uranium milling, fuel element fabrication, nuclear power generation, radioactive waste disposal, fuel reprocessing, radioactive material transportation, reactor servicing, and decontamination.

The demand for technicians trained in nuclear science and engineering is growing. North Carolina electric power generating companies are turning to the use of nuclear energy to produce the increasing needs for electrical power for industrial, commercial and home use. At present and in the foreseeable future, the supply of nuclear technicians will not meet the demands of this one industry in our state.

Curriculum

The curriculum for Nuclear Engineering Technology and Health Physics Technology is currently under development by TIA with assistance from scientists, engineers and industrialists who are well known in the field of nuclear science. Further information may be obtained by contacting TIA.

FIRE SCIENCE

Purpose

The rapidly developing age of scientific developments changes the ways of man and continually brings about a need for further changes. The Public Fire Service is no exception. New chemicals that are volatile, pyrophonic, radioactive, and explosive are being transported and stored in every section of North Carolina.

Space Age Fire Service requires intelligent, courageous, and dedicated men. They must be willing to keep pace with the rapid technical changes and be able to cope with new problems that confront them. This is necessary not only to save the lives of others but also their own.

Rising cost and the increased demands on governmental budgets requires more efficient use of available funds, equipment, and manpower. The curriculum is designed to enable the individual to draw from a vast store of technical and professional knowledge to make decisions effectively both on and off the emergency scene. In this manner he may assist the economic life of the community through improved services to the public.

Through technical education, the individual requires specialized knowledge of this vital field of public service and develops specific competencies for the performance of fire service administrative and supervisory duties. The curriculum includes areas such as the scientific understanding of fire hazards and their control and general courses that prepare him to work harmoniously with people.

Job Description

The opportunities are excellent for the individual with adequate training and ability. Students seeking gainful employment may be hired by government agencies, industrial firms, educational organizations, and insurance rating organizations.

Employed persons should have oportunities for positions requiring increased skill and responsibility as they increase their job competence.

Developing fire fighting practice skills is not within the scope of this curriculum. These skills may be readily developed within the local fire department and from Fire Service Training courses available. An individual just entering the Fire Service Field may start as firefighter at which time he will gain or improve his firefighting skills and an in-depth knowledge of specific equipment. With demonstrative abilities individuals may find positions as a fire department officer, and instructor, or supervisor in a industrial plant.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
ENG	101	Composition	3	0	3
BUS	272	Principles of Supervision	3	0	3
MAT	101	Technical Mathematics	5	0	5
FIP	115	Fire Prevention Programs	3	0	3
FIP	101	Introduction to Fire Protection Hazards	3	0	3
			17	0	17

Second Quarter			*C*	*L*	*CH*
ENG	102	Composition II	3	0	3
PSY	206	Applied General Psychology	3	0	3
PHY	131	Matter and Energy	3	2	4
FIP	211	Grading of Fire Defenses	3	0	3
FIP	102	Municipal Fire Protection	3	0	3
			15	2	16

Third Quarter			*C*	*L*	*CH*
ENG	103	Report Writing	2	2	3
FIP	105	Applied Electricity for Fire Protection	3	2	4
DFT	118	Drafting and Blueprint Interpretation	0	6	2
FIP	120	Municipal Finance	5	0	5
FIP	135	Training Programs and Methods of Instruction	3	0	3
			13	10	17

Fourth Quarter			*C*	*L*	*CH*
ENG	204	Oral Communication	3	0	3
CHM	101	Chemistry	4	2	5
FIP	201	Fire Detection and Investigation	3	0	3
FIP	230	Hydraulics and Water Distribution Systems	3	2	4
FIP	103	Construction Codes and Material Rating	2	2	3
			15	6	18

Fifth Quarter

			C	L	CH
FIP	220	Fire Fighting Strategy	3	2	4
FIP	218	Chemistry of Hazardous Material	3	2	4
FIP	231	Sprinkler and Standpipe Systems	3	2	4
FIP	208	Municipal Public Relations	3	0	3
		Technical Elective	3	0	3
		Social Science Elective	3	0	3
			18	6	21

Sixth Quarter

			C	L	CH
FIP	235	Inspection Principles and Practices	3	4	5
FIP	245	Automatic Alarm and Extinguishing System	3	2	4
BUS	233	Personnel Management	3	0	3
FIP	225	Fire Protection Law	3	0	3
		Social Science Elective	3	0	3
			15	6	18
		Total			107

ELECTIVES

Electives for the *Fire Science Technology Curriculum* may be selected from the following courses. The school will determine which of those are to be offered in any given quarter of the program.

TECHNICAL

			C	L	CH
FIP	205	Industrial Hazards	3	2	4
FIP	240	Multiple Line Insurance and Rating Schedules	4	0	4
FIP	216	Chemical & Radiation Hazards	3	2	0
FIP	226	Industrial Safety	3	0	3

SOCIAL SCIENCE

SSC	201	Social Science	3	0	3
SSC	202	Social Science	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3

HUMAN SERVICES

DENTAL ASSISTING

DENTAL ASSISTING

Purpose

Dental assisting is one of the fastest growing occupations for women today. The role of the dental assistant has evolved from that of receptionist only to that of a fully participating member of the dental team; primary emphasis is on chairside assisting, although she continues to perform numerous duties related to office management, patient relations, and laboratory procedures. The dental profession now recognizes the contribution the dental assistant can make to the extension of services and increased productivity of the dental office. Projected needs call for a five-fold expansion in numbers of graduates and continued improvement in the quality of training programs.

The specific objectives of the Dental Assisting Curriculum are to develop the following competencies:

1. Understanding of the business procedures of the dental office.
2. Understanding of principles and beginning skill in the procedures of chairside assisting, including effective patient relationships.
3. Understanding of principles and beginning skills in performance of selected laboratory procedures commonly carried out in the dental office.

Job Description

The duties of the dental assistant vary somewhat, depending on the number of auxiliary workers employed. In some offices the assistant is responsible for all three areas described below; in others, she may be responsible for only one area.

In rendering chairside assistance to the dentist, the dental assistant is responsible for placing instruments for use, keeping the operating field clear during treatment, preparing restorative materials and dental cements, passing materials and instruments during dental procedures, and care of the operatory after use. She may take X-rays of the teeth and apply fluorides under the direction of the dentist. In the laboratory of the dental office, she may make models of the teeth and mouth, cast inlays and crowns, process exposed X-ray films and mount finished X-rays. In acting as office manager and receptionist, she receives patients, arranges appointments, records treatment, keeps accounts, maintains inventories, and orders supplies.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter			*C*	*L*	*CH*
DEN	1001	Introduction to Dental Assisting	2	0	2
DEN	1002	Dental Materials	1	9	5

DEN	1003	Preclinical Sciences I	3	3	4
ENG	1102	Communication Skills	3	0	3
PSY	1112	Personality Development	3	0	3
			12	12	17

Second Quarter

			C	L	CH
DEN	1004	Preclinical Sciences II	3	0	3
DEN	1005	Dental Office Management I	3	2	4
DEN	1006	Clinical Procedures I	3	6	5
DEN	1012	Dental Roentgenology	2	6	4
			11	14	16

Third Quarter

			C	L	CH
DEN	1013	Oral Health Education	1	2	2
DEN	1007	Clinical Procedures II	4	6	6
DEN	1008	Dental Office Management II	3	0	3
DEN	1009	Dental Office Practice I	0	12	4
BUS	1102	Typewriting	1	3	2
			9	23	17

Fourth Quarter

			C	L	CH
DEN	1010	Dental Office Practice II	0	27	9
ENG	1105	Written Communications	3	0	3
			3	27	12

EARLY CHILDHOOD EDUCATION AND CHILD CARE

Purpose

The demand for the skills of assistants in early childhood education is increasing rapidly for several reasons: (1) Recent legislation has provided the opportunity for all five-year-olds to attend public kindergarten, requiring the services of many new teaching assistants; (2) additional legislation has placed requirements for higher standards and increased numbers of staff in all child care facilities; (3) more mothers of preschool children are entering the labor force or returning to school and placing their children in group care situations; and (4) research and professional insights have placed greater emphasis on the child's first years as the strategic years in his development. As the need for services to children increases, the need for trained staff becomes more evident.

The purpose of the Early Childhood Education program is to prepare the personnel needed to effectively work with children individually, and in groups. The assistant must understand and be able to provide for the emotional, mental and physical needs of children from infancy to pre-adolescence. Planning and implementing a program rich in creative activities, music, science and art is as much a part of the work of the early childhood assistant as assisting children in the development of language and computation. Supervision of outdoor and indoor play activities, personal care and hygiene, and effective methods of discipline are also developed.

The graduate will also have had training in the administration and supervision of day care programs, and working with parents and community agencies. Throughout the program, students receive supervised laboratory experience which enables them to become skillful in providing the type of program which allows each child to develop his maximum potential.

Job Description

The early childhood assistant is prepared to accept employment in a variety of situations.

The graduates are prepared to become teachers' assistants in kindergarten programs and grades 1 to 3, and teachers in nursery school programs and programs designed to care for and develop the very young child from infancy through the toddler stage.

Employment may be found in recreation centers, camps, day care centers, residential homes for children, and the public schools.

Programs for the exceptional child and the developmentally handicapped also provide opportunities for the skilled early childhood assistant.

Students may elect to receive a diploma after successfully completing four quarters. Those successfully completing six quarters may receive an associate degree.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
EDU	130	Programming for Young Children	3	3	4
EDU	132	Nutrition and Health	5	0	5
EDU	101	Activities for Young Children	5	0	5
EDU	135	Human Growth and Development	5	0	5
ENG	101	Composition I	3	0	3
			21	3	22

Second Quarter

			C	*L*	*CH*
EDU	140	Working with Young Children I	5	9	8
EDU	105	Science	3	2	4
EDU	103	Music in the Early Childhood Program	3	0	3
SSC	201	Social Science	3	0	3
			14	11	18

Third Quarter

			C	*L*	*CH*
EDU	145	Working with Young Children II	3	9	6
EDU	143	Group Care of Infants	3	6	5
EDU	108	Art in Early Childhood Program	3	2	4
PSY	201	General Psychology	3	0	3
			12	17	18

Fourth Quarter

			C	L	CH
EDU	203	The Exceptional Child	3	12	9
EDU	204	Parent Education	3	0	3
ENG	207	Literature in Early Childhood Program	3	0	3
SSC	204	Families in American Culture	3	0	3
ENG	204	Oral Communication	3	0	3
			15	12	21

Fifth Quarter

			C	L	CH
EDU	227	Programming Through Learning Resources	3	0	3
EDU	236	Human Growth and Development II	5	0	5
SSC	207	The Child and Community Services	3	0	3
EDU	252	Seminar-Practicum in Elementary School	4	15	9
			15	15	20

Sixth Quarter

			C	L	CH
		Elective	3	0	3
BUS	249	Administration and Supervision	5	0	5
EDU	250	Special Problems	3	0	3
EDU	202	Seminar-Practicum in Pre-School	4	15	9
			15	15	20
		TOTAL	90	73	120

PRACTICAL NURSING

Purpose

The accelerated growth in North Carolina and rapid advancement in medical technology demands well-trained, capable personnel for health service positions.

The aim of this program is to make available the opportunity for the interested male and female to prepare themselves for participation in the care of patients of all ages, in various states of dependency, and with a variety of health conditions.

Students are selected on the basis of interest in and aptitude for nursing, as determined by pre-entrance test, high school records, personal interviews, health reports, and character references.

Job Description

The Practical Nurse Education program is taught in a 4-quarter period of classroom instruction and supervised nursing practice.

Following a period of classroom instruction in fundamentals of nursing, and principles from the sciences, the student practices nursing skills under faculty supervision in the hospital areas. The student advances in her studies, and in the nursing care of patients of all ages through planned assignments in medical-surgical nursing, care of the mother and newborn infant, and the care of the sick child. Other learning opportunities are planned in community facilities.

The graduate practical nurse is eligible to take, and must pass, the North Carolina Board of Nursing Licensing examination for practical nurses in order to practice in North Carolina.

The LPN is qualified and prepared to function in a variety of situations: hospitals, nursing homes, clinics, doctors' offices, private duty nursing, and in public health programs. In all situations the LPN functions under the supervision of a registered nurse and/or a licensed physician.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CL*	*CH*
PNE	1001	Fundamentals of Health	2	0	0	2
PNE	1002	Basic Science	6	4	0	8
PNE	1003	Fundamentals of Practical Nursing	4	8	0	8
MAT	1150	Math for Nurses	2	0	0	2
			14	12	0	20

Second Quarter

			C	*L*	*CL*	*CH*
PSY	1101	Human Relations	3	0	0	3
*PNE	1006	Maternity Nursing	2	2	0	3
PNE	1005	Fundamentals of Medical-Surgical Nursing I	2	2	0	3
PNE	1004	Clinical Nursing Experience I	0	0	21	7
			7	4	21	16

Third Quarter

			C	*L*	*CL*	*CH*
*PNE	1007	Nursing of Children	2	2	0	3
PNE	1009	Medical-Surgical Nursing II	4	0	0	4
PNE	1008	Clinical Nursing Experience II	0	0	21	7
PNE	1010	Introduction to Drug Administration	2	2	0	3
			8	4	21	17

Fourth Quarter

			C	*L*	*CL*	*CH*
ENG	1102	Communication Skills	3	0	0	3
PNE	1012	Advanced Medical-Surgical Nursing III	4	0	0	4
PNE	1014	Vocational Adjustments	2	2	0	3
PNE	1011	Clinical Nursing Experience III	0	0	21	7
			9	2	21	17

*A portion of the class may be scheduled to take these courses during another quarter.

Mechanical Occupations

AIR CONDITIONING, HEATING, AND REFRIGERATION TECHNOLOGY

Purpose

With the increase in the use of air conditioning and refrigeration, there is a great demand for trained personnel to design systems, to install and maintain equipment, and to supervise operations. Most new homes are built with central air conditioning, and many others are having air conditioning added. Transportation systems and food processing industries are requiring greater use of refrigeration for transit, storage and display of products. Virtually every business and industry is utilizing some air conditioning or refrigeration equipment which requires periodic servicing by a skilled mechanic or technician. This curriculum is designed to train each student to meet such needs to the maximum of his interest and ability.

Since the student may make a better choice of goals after gaining more specific knowledge of the subject matter, he is given a course of study with three discrete steps of achievement. A particular option may be selected at any time when the student assesses his own capabilities and goals in view of the requirements of the program and the type of employment opportunities.

Job Descriptions

Mechanic's Option (Diploma): The refrigeration and air conditioning mechanic's skills are developed toward installation, inspection, maintenance, services and repair of domestic and commercial equipment. He is involved with controls, regulating temperatures, and humidity. He installs ducts and piping systems for distribution of air, water, steam, and refrigerants. He will receive 12 months of training, and upon completion he will receive a (trade) mechanic's diploma.

Technician's Option (Advanced Diploma): Students who want to go further are eligible to undertake six months additional training for expanded opportunities and responsibilities. Upon completing these six additional months they will be able to perform some planning, some design, and some organization of maintenance. Sizing of commercial refrigeration units for cooling or freezing is one of the steps to the design function. The student will be able to make residential air conditioning load calculations for year-round air conditioning installations.

Technology Option (Associate in Applied Arts Degree): This curriculum is a 24-month program, designed to prepare the student to assist in planning, installing, operating, and maintaining air conditioning equipment. The required technical information is presented and related skills are developed which will enable the graduate to function efficiently when working with engineers, systems designers, skilled craftsmen, salesmen, and others in the field. Considerable emphasis is placed on self-development in an effort to encourage the graduate to continue to study and grow as the industry advances.

The Associate Degree graduate may be employed in areas of sales, installation, maintenance, production drafting, systems design, or as a research engineering assistant.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	L	CH
WLD	1101	Basic Gas and Electric Welding	1	3	2
AHR	1121	Principles of Refrigeration	5	6	7
MAT	1101	Fundamentals of Mathematics	5	0	5
ENG	1101	Reading Improvement	1	2	2
DFT	1104	Blueprint Reading: Mechanical	0	3°	1
			12	14	17

Second Quarter

			C	L	CH
PHY	1101	Applied Science	3	2	4
AHR	1122	Domestic and Commercial Refrigeration	3	9	6
MAT	1102	Algebra	5	0	5
ENG	1102	Communication Skills	3	0	3
ELC	1102	Applied Electricity	2	3°	3
			16	14	21

Third Quarter

			C	L	CH
DFT	1116	Blueprint Reading: Air Conditioning	1	3°	2
AHR	1123	Principles of Air Conditioning	5	6°	7
AHR	1128	Automatic Controls	3	6	5
PSY	1101	Human Relations	3	0	3
			12	15	17

Fourth Quarter

			C	L	CH
DFT	1150	Duct Layout and Fabrication	2	4	4
AHR	1124	Air Conditioning and Refrigeration Servicing	3	6°	5
AHR	1126	All Year Comfort System	3	6°	5
BUS	1103	Small Business Operations	3	0	3
			11	16	17

FOR THOSE WHO DESIRE ADDITIONAL TRAINING

Graduates of a diploma curriculum in air conditioning and refrigeration, with the recommendation of the faculty advisor and with the approval of the department head, may be permitted to undertake an additional two quarters of technical instruction leading to a technician's diploma in Air Conditioning and Refrigeration.

SUGGESTED CURRICULUM BY QUARTERS

TECHNICIAN'S OPTION — 18 MONTHS

Fifth Quarter

			C	L	CH
AHR	209	Commercial Heat Load Calculations and Commercial Systems Design	5	6	7

DFT	232	AHR Drafting	2	4	3
ENG	102	Composition II	3	0	3
MAT	131	Elementary Technical Mathematics I	3	4	5
			13	14	18

Sixth Quarter

			C	*L*	*CH*
AHR	228	Air Conditioning Systems & Duct Design	3	6	5
MAT	132	Elementary Technical Mathematics II	3	4	5
ENG	204	Oral Communications	3	0	3
		Social Science Elective	3	0	3
			12	10	16

TECHNOLOGY OPTION — 24 MONTHS

Graduates of the air conditioning and refrigeration Technician's Diploma with the recommendation of the faculty advisor and approval of the department head may be permitted to undertake an additional two quarters of technology courses leading to an associate degree in Air Conditioning and Refrigeration.

Seventh Quarter

			C	*L*	*CH*
AHR	201	Winter Air Conditioning	3	4	5
PHY	131	Matter and Energy	3	2	4
PSY	206	Applied Psychology	3	0	3
		Elective			

Eight Quarter

			C	*L*	*CH*
AHR	230	Seminar Research	2	6	5
PHY	132	Electricity and Magnatism	3	2	4
ENG	103	Report Writing	3	0	3
		Elective			

ELECTIVES

Electives for the *Air Conditioning and Refrigeration Technology Curriculum* may be selected from the following courses. The school will determine which of these are to be offered in any given quarter of the program.

TECHNICAL

			C	*L*	*CH*
AHR	217	Circuits and Controls II	3	3	4
AHR	210	Installation and Design Problems	2	6	4
AHR	202	Fuels and Burners	2	3	3

SOCIAL SCIENCE

			C	*L*	*CH*
PSY	213	Advanced Psychology	3	0	3
SSC	201	Social Science I	3	0	3
SSC	202	Social Science II	3	0	3
PSY	206	Applied Psychology	3	0	3
ECO	102	Economics	3	0	3
SSC	205	American Institutions	3	0	3
POL	201	United States Government	3	0	3
ISC	201	Industrial Organization and Management	3	0	3
SSC	203	Environmental Studies	3	0	3

INDUSTRIAL MAINTENANCE-ELECTROMECHANICAL

Purpose

With the increasing use of automation — electrical, hydraulic, pneumatic — in industry as well as residential and business there is a great demand for trained personnel to install, service, repair and otherwise maintain and/or supervise the operation of complex equipment.

Since the student may make a better choice of career goals after gaining more specific knowledge and exploring various subject matter he will be given a course of instruction paced to his own achievement and based upon his evaluated ability and interests.

A particular option and exit may be selected at any time when the student assesses his own capabilities and goals in view of the requirements of the program and the employment opportunities.

A certificate in *Industrial Maintenance-Electromechanical* may be awarded to students satisfactorily completing at least the equivalent of two quarters of course work. The course work may or may not include general and related courses. The student must demonstrate the ability to perform basic service and maintenance of mechanical and/or electrical mechanical equipment. He must be recommended for the certificate by his department head.

A diploma in *Industrial Maintenance-Electromechanical* may be awarded to students completing as a minimum, all courses or their equivalent, in the current catalog (with announced revisions) upon recommendation by the department head.

The courses are all to be sequenced and interlocked to some degree. The student should be focusing on the hands-on experiences because he achieves the greatest understanding through laboratory work, as well as the desire to acquire more theoretical knowledge about the workings of devices, equipment and systems. Care and gradualness will be used to introduce the hand skills as well as the unified concepts. The hand skills and other related topics such as care and use of hand tools, measuring instruments, shop safety, numerical control, etc., will be introduced at appropriate times in the various technology courses and student project. This is done to avoid the pitfall of developing feelings of a lack of relevance in eventual use. When introduced obliquely these topics should achieve greater acceptance by, and seem more relevant to the student.

Job Description

The various fields to be included at the service and mechanic exits might be industrial electricity, small appliance, major appliance, office machines, electrical maintenance major, electrical maintenance minor, mechanical maintenance major, and mechanical maintenance minor to name a few.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter

			C	*L*	*CH*
MAT	1101	Fundamentals of Mathematics	5	0	4
PME	1089	Hand Tool and Portable Power Tools	2	2	3
ENG	1101	Reading Improvement	1	2	2
DFT	1100	Basic Mechanical Drawing	1	3	2
AHR	1112	Introduction to Air Conditioning	3	3	4
WLD	1201	Oxyacetylene Welding I	2	6	4
			14	16	19

Second Quarter

			C	*L*	*CH*
MAT	1102	Algebra (Applied)	5	0	5
ELC	1101	Electrical Fundamentals I	3	3	4
AHR	1113	Air Conditioning and Heat Controls	3	3	4
PHY	1101	Applied Science I	3	2	4
WLD	1110	Arc Welding	2	6	4
			16	14	21

Third Quarter

			C	*L*	*CH*
MAT	1103	Geometry	3	0	3
DFT	1113	Blueprint Reading (Electrical)	1	3	2
ELC	1103	Electrical Fundamentals II	3	3	4
BUS	1105	Industrial Organization/Sociological	3	0	3
ELC	1121	Electrical Machines & Controls	2	2	3
MEC	1113	Shop Theory and Process I	2	3	3
ENG	1102	Communication Skills	3	0	3
			17	11	21

Fourth Quarter

			C	*L*	*CH*
MAT	1104	Trigonometry	3	0	3
ENG	1103	Report Writing	3	0	3
ELN	1102	Applied Electronics	3	3	4
ELC	1122	Electrical and Mechanical Maintenance	3	6	5
MEC	1135	Hydraulics and Pneumatics	2	3	3
			14	12	18

MANUFACTURING TECHNOLOGY
with
(MACHINIST DIPLOMA OPTION)

MANUFACTURING TECHNOLOGY
with
(MACHINIST DIPLOMA OPTION)

Purpose

The curriculum is designed to meet industry's needs for trained machinists and technicians by affording the students four major exits. After two quarters a student may leave the program with a certificate. Four quarters of satisfactory work are required for the diploma; six quarters, for the advanced diploma; and eight quarters, for the associate degree. The curriculum affords associate degree or diploma candidates four basic options — the accelerated or regular academic route to a degree or diploma, and the option of cooperative or on-campus route.

Job Description

The machinist is a skilled metal worker who shapes metal parts by using machine tools and hand tools. His training and experience enable him to plan and carry through all the operations needed in turning out a machined product. A machinist is able to select the proper tools and material required for each job and to plan the cutting and finishing operations in their proper order so that he can complete the finished work according to blueprint or written specifications. He makes standard shop computations relating to dimensions of work, tooling, feeds, and speeds of machining. He uses precision measuring instruments such as micrometers and gages to measure the accuracy of his work to thousandths of an inch.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		*C*	*L*	*CH*
MEC 1010	Machine Processes	2	6	4
MAT 1101	Fundamentals of Mathematics	5	0	5
OR				
MAT 101	Technical Mathematics	5	0	5
ENG 1101	Reading Improvement	1	2	2
OR				
ENG 101	Composition I	3	0	3
DFT 1100	Basic Mechanical Drawing	1	3	2
MEC 1110	Manufacturing Processes	2	6	4

Weekly Contact Hours: 28
Total Credit Hours: 17

Second Quarter		*C*	*L*	*CH*
MEC 1020	Machine Processes	2	6	4
MAT 1102	Algebra	5	0	5
OR	OR			
MAT 102	Technical Mathematics	5	0	5
ENG 1102	Communication Skills	3	0	3
OR	OR			
ENG 102	Composition II	3	0	3
WLD 1101	Techniques of Welding I	1	3	2

PHY 1101	Applied Science	3	2	4
OR	OR			
PHY 101	Properties of Matter	3	2	4
MEC 1120	Manufacturing Processes	2	6	4

Weekly Contact Hours: 33
Total Credit Hours: 22

Third Quarter

		C	L	CH
PSY 1101	Human Relations	3	0	3
PHY 1102	Applied Science	3	2	4
OR	OR			
#PHY 102	Work, Energy and Power	3	2	4
MEC 1115	Treatment of Ferrous Metals	2	3	3
DFT 1106	Blueprint Reading: Mechanical	1	3	2
*MEC 1030	Machine Shop Theory & Practice I	0	6	2
*MEC 1040	Machine Shop Theory & Practice II	0	6	2
**MEC 1220	Internship I	2	20	4

Wkly Contact Hours: Regular - 29
Co-op - 19
Total Credit Hours 20

* Non-Co-op student
** Co-op student
#Accelerated program

Fourth Quarter

		C	L	CH
*MEC 1050	Machine Shop Theory & Practice III	0	6	3
*MEC 1060	Machine Shop Theory & Practice IV	0	6	3
MEC 1116	Treatment of Non-Ferrous Metals	2	3	3
BUS 1105	Industrial Organizations	3	0	3
ENG 1103	Report Writing	3	0	3
	OR			
#ENG 103	Report Writing	2	2	3
*MEC	Elective (Dept. Approval)			4
**MEC 1230	Internship II	2	20	4

Wkly Contact Hours: Regular - 23
Co-op - 13
Total Credit Hours 19

DIPLOMA

Fifth Quarter

		C	L	CH
ENG 102	Composition II	3	0	3
*MEC 201	Precision Machining I	0	6	2
*MEC 202	Precision Machining II	0	6	2
MEC 211	Physical Metallurgy	2	3	3
MAT 131	Elem. Tech. Math I	3	4	5
**MEC 222	Internship III	2	20	4

Wkly Contact Hours: Regular - 27
Co-op - 17
Total Credit Hours 19

Sixth Quarter

		C	L	CH
ENG 204	Oral Communication	3	0	3
*MEC 203	Jig, Fixture and Die Making I	0	6	2
*MEC 204	Jig, Fixture and Die Making II	0	6	2
**MEC 223	Internship IV	2	20	4
MEC 205	Strength of Materials	3	3	4
OR	OR			
#MEC 213	Production Planning	3	3	4
MAT 132	Elem. Tech. Math II	3	4	5

Wkly Contact Hrs: Regular - 28
Co-op - 18
Total Credit Hours: 20

Seventh Quarter

		C	L	CH
PHY 131	Matter and Energy	3	2	4
*MEC 208	Model Making I	0	6	2
*MEC 209	Model Making II	0	6	2
WLD 102	Techniques of Welding II	1	3	2
MEC 206	Cutter Grinding	2	6	4
**MEC 224	Internship V	2	20	4

Wkly Contact Hours: Regular - 29
Co-op - 19
Total Credit Hours 18

Eighth Quarter

		C	L	CH
PHY 132	Electricity and Magnetism	3	2	4
*MEC 218	Design and Manufacturing I	0	6	2
*MEC 219	Design and Manufacturing II	0	6	2
**MEC 225	Internship VI	2	20	4
MEC 207	Automatic & Semi-Automatic Machinery	3	3	4
SSC 208	Industrial Sociology	3	0	3

Weekly Contact Hours: Regular - 26
Co-op - 16
Total Credit Hours: 19

*Non Co-op student
**Co-op student
# Accelerated program

MECHANICAL DRAFTING

Purpose

This curriculum is designed to prepare students to enter the field of mechanical drafting. The first two quarters contain courses basic to all fields of drafting. The third and fourth quarters contain specialization and related courses that prepare one to enter mechanical drafting occupations.

Each course is prepared to enable an individual to advance rapidly in drafting proficiency upon entering the field of work. Courses are arranged in sequence to develop drafting skills and proficiency in mathematics and science. The draftsman associates with many levels of personnel — administrative, architects, engineers, skilled workmen — and must be able to communicate effectively with them. Courses to develop knowledge and skills in communication, human relations, economics and industrial organization are provided to assist the student in developing understanding and confidence in his relations with other persons.

Job Description

Draftsman prepares clear, complete, and accurate working plans and detailed drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions: makes final sketch of the proposed drawing, checking dimension or parts, materials to be used, the relation of one part to another, and the relation of the various parts to the whole structure. Makes any adjustments or changes necessary or desired. Inks in lines and letters on pencil drawings as required. Exercises manual skill in the manipulation of triangle, T-square, and other drafting tools. Lays tracing paper on drawing and traces drawing in pencil or ink. Makes charts for representation of statistical data. Makes finished designs from sketches. Utilizes knowledge of various machines, engineering practices, mathematics, building materials, and other physical sciences to complete the drawings.

Mechanical draftsman performs the general duties of a draftsman and also specializes in making rough drafting sketches of proposed mechanical devices, and then drawing necessary details. Prepares accurate scale drawings of parts or machines from specifications.

Courses leading to a diploma in Mechanical Drafting are normally offered only in the evening at TIA. A student may complete his requirements by attending three or four nights a week for eleven quarters. He must be able to take the courses when offered by the Institute in order to finish in this minimum time. The offering of any of these courses is contingent upon sufficient enrollment.

SUGGESTED CURRICULUM BY QUARTER FOR EVENING CLASSES

First Quarter

			C	L	CH
DFT	1120	Drafting I	2	4	4
MAT	1103	Geometry	3	0	3
			5	4	7

Second Quarter

			C	L	CH
DFT	1121	Drafting II	2	4	4
MAT	1102	Algebra	5	0	5
			7	4	9

Third Quarter

			C	L	CH
DFT	1122	Drafting III	2	4	4
ENG	1101	Reading Improvement	2	0	2
			4	4	6

Fourth Quarter

			C	L	CH
DFT	1123	Drafting IV	2	4	4
PHY	1101	Applied Science	3	2	4
			5	6	8

Fifth Quarter

			C	L	CH
DFT	1125	Descriptive Geometry	2	4	4
MAT	1104	Trigonometry	3	0	3
			5	4	7

Sixth Quarter

			C	L	CH
DFT	1130	Drafting V	2	4	4
PHY	1102	Applied Science	3	2	4
			5	6	8

Seventh Quarter

			C	L	CH
DFT	1131	Drafting VI	2	4	4
ENG	1102	Communication Skills	3	0	3
			5	4	7

Eighth Quarter

			C	L	CH
DFT	1132	Drafting VII	2	4	4
PSY	1101	Human Relations	3	0	3
			5	4	7

Ninth Quarter

			C	L	CH
DFT	1133	Drafting VIII	2	4	4
MEC	1113	Shop Processes	2	3	3
			4	7	7

Tenth Quarter

			C	L	CH
MEC	115	Ferrous Metals	2	3	3
MEC	1114	Shop Processes	2	3	3
			4	6	6

Eleventh Quarter

			C	L	CH
MEC	117	Non-Ferrous Metals	2	3	3
BUS	1105	Ind. Organization	3	0	3
			5	3	6

TRANSPORTATION MAINTENANCE TECHNOLOGY

TRANSPORTATION MAINTENANCE TECHNOLOGY

Purpose

There is a growing need for transportation maintenance technicians to rebuild, test and service automotive units including diesel engines. The Service Managers Committee of the American Motors Association estimates that 45 to 50 thousand mechanics and technicians are needed each year to keep service shops properly manned. However, fewer than 10,000 recruits are entering the profession annually.

North Carolina, in its tremendous industrial growth, feels the need for more highly trained and skilled personnel in the automotive and transportation field. Industry is dependent upon transportation for movement of raw materials and finished products. Automotive units and diesel engines are prime movers, and require technicians to service and maintain them for proper operation. This curriculum has been developed to train technicians for the transportation maintenance field.

The Transportation Maintenance Curriculum is designed for students who are interested in work on or related to motor vehicles. This curriculum provides for entrance into technician level employment areas. Principles of design and operation provide for an exact appreciation of the functions of automotive units. Correlated laboratory work develops ability to execute or supervise diagnostic tests and repairs.

Job Description

The transportation maintenance technician has a knowledge of laboratory procedures in automotive and associated areas. He is capable of operating laboratory equipment and instruments to perform a variety of tests on materials and equipment. Included also may be performance testing of new materials and equipment. As a diagnostician, he may, with the use of instruments, locate automotive or electrical defects and arrange for repair. He is often required to record data, write reports and make recommendations.

SUGGESTED CURRICULUM BY QUARTERS

First Quarter		*C*	*L*	*CH*
PME 1010	Internal Combustion Engine Theory	2	6	4
MAT 1101	Fundamentals of Math	5	0	5
or				
# MAT 101	Technical Mathematics	5	0	5
ENG 1101	Reading Improvement	1	2	2
or				
# ENG 101	Composition I	3	0	3
DFT 1100	Basic Mechanical Drawing	1	3	2
PME 1030	Automotive Electrical Systems	2	6	4

Weekly Contact Hours: 28
Total Credit Hours: 17 or # (18)

Second Quarter

		C	L	CH
PME 1120	Automotive Fuel Systems	2	6	4
PME 1130	Ignition Systems	1	3	2
MAT 1102	Algebra	5	0	5
or				
MAT 102	Technical Math	5	0	5
ENG 1102	Communication Skills	3	0	3
or				
# ENG 102	Composition II	3	0	3
WLD 1101	Tech. of Welding I	1	3	2
PHY 1101	Applied Science	3	2	4
or				
# PHY 103	Electricity	3	2	4

Weekly Contact Hours: 29
Total Credit Hours: 20

Third Quarter

		C	L	CH
PME 1110	Internal Combusion Engine Rebuilding	0	6	2
PSY 1101	Human Relations	3	0	3
PHY 1102	Applied Science	3	2	4
or				
# PHY 102	Work, Energy and Power	3	2	4
PME 1040	Auto Chassis and Brakes	2	6	4
MEC 1010	Machine Process	2	6	4

Weekly Contact Hours: 30
Total Credit Hours: 18 or (19)

Fourth Quarter

		C	L	CH
PME 1060	Internal Combustion Engine Diagnosis	2	6	4
PME 1050	Auto Power Trains	2	6	4
BUS 1103	Small Business	3	0	3
ENG 1103	Report Writing	3	0	3
or				
# ENG 103	Report Writing	2	2	3
PME	Elective			5

Weekly Contact Hours: 22
Total Credit Hours: 19

#Accelerated Program

DIPLOMA

Fifth Quarter

		C	L	CH
ENG 102	Communication II	3	0	3
	or Elective	3	0	3
*PME 209	Foreign Engines	2	6	4
or				
*PME 215	Diesel Engines	2	6	4
**PME 230	Internship I (Automotive)	2	20**	4
or				
**PME 240	Internship I (Diesel)	2	20**	4
MAT 131	Elem. Tech. Math I	3	4	5
or				
	Elective			4

Weekly Contact Hours: Regular — 24
Cooperative — 38
Total Credit Hours: 16

Sixth Quarter

		C	L	CH
MAT 132	Elem. Tech. Math II	3	4	5
ENG 204	Oral Communication	3	0	3
*PME 210	American Engine Servicing	2	6	4
or				
*PME 216	Diesel Engine Theory & Rebuilding	2	6	4
**PME 231	Internship II (Automotive)	2	20**	4
or				
**PME 241	Internship II (Diesel)	2	20**	4
	Elective			

Weekly Contact Hrs.: Regular — 27
Coop — 30
Total Credit Hours: 17

*Co-op and on-campus
**Co-op option

Seventh Quarter

		C	L	CH
PHY 131	Matter and Energy	3	2	4
or				
MEC 1020	Machine Processes	2	6	4
AHR 101	Air Conditioning	2	3	3
WLD 102	Tech. of Welding II	1	3	2
*PME 211	Foreign Automotive	2	6	4
or				
*PME 217	Diesel Diagnosis	2	6	4
**PME 232	Internship III (Automotive)	2	20**	4
or				
**PME 242	Internship III (Diesel)	2	20**	4

Weekly Contact Hours: Regular — 32
Coop — 34
Total Credit Hours: 17

Eighth Quarter

		C	L	CH
PHY 132	Electricity & Magnetism	3	2	4
or				
*PME 212	Rotary and Opposed Piston (Auto)	2	6	4
or				
*PME 218	Diesel Fuel Injection	2	6	4
PME 207	Chassis Suspension & Power Systems	4	6	6
SSC 208	Industrial Sociology	3	0	3
**PME 233	Internship IV (Automotive)	2	20**	4
or				
**PME 243	Internship IV (Diesel)	2	20**	4

Weekly Contact Hours: Regular — 28
Coop — 34

*Non-Co-op student

**Co-op student

ELECTIVES

			C	L	CH
MEC	235	Hydraulics and Pneumatics	3	3	4
PME	201	Motor Vehicle Laws and Regulations	3	0	3
PME	202	Emission Control Systems	2	3	3
PME	205	Disc Brakes	0	6	2
PME	206	Alternator and Starter Rebuilding	1	3	2
PME	213	Engine Modification & Advanced Engine Designs	0	6	2
PME	214	Instruments, Gauges, & Elect. Accessories	0	6	2
PME	220	Applied Hydraulics	2	3	3
PME	224	Advanced Automatic Transmissions	3	6	5

WELDING

Purpose

The field of welding offers a person prestige, security and a future of continuous employment with steady advancement. It offers employment in practically any industry: shipbuilding, automotive, aircraft, construction, pipe fitting, production shop, job shop and many others.

Job Description

Welders join metals by applying intense heat, and sometimes pressure to melt the edges to form a permanent bond. Closely related to welding is "oxygen cutting." Of the more than 35 different ways of welding metals, arc, gas, and resistance welding are the three most important.

The principal duty of the welder using manual techniques is to control the melting by directing the heat from either an electric arc or gas welding torch and to add filler metal where necessary to complete the joint. He should possess a great deal of manipulative skill with a knowledge of jigs, welding symbols, mathematics, basic metallurgy and blueprint reading.

The welding curriculum offers the student the choice of on campus laboratory or cooperative work in industry. A certificate will be awarded after the successful completion of the first two quarters of the program and a diploma after successful completion of the four quarter program.

SUGGESTED CURRICULUM FOR FULL-TIME STUDENTS

First Quarter

			C	*L*	*CH*
WLD	1110	Arc Welding I	2	6	4
WLD	1201	Oxyacetylene Welding I	2	6	4
MAT	1101	Fundamentals of Mathematics	5	0	5
ENG	1101	Reading Improvement	1	2	2
DFT	1100	Basic Mechanical Drawing	1	3	2
			11	17	17

Second Quarter

			C	*L*	*CH*
WLD	1120	Arc Welding II	2	6	4
WLD	1202	Oxyacetylene Welding II	2	6	4
MAT	1102	Algebra	5	0	5
ENG	1102	Communication Skills	3	0	3
PHY	1101	Applied Science	3	2	4
			15	14	20

CERTIFICATE

Third Quarter

			C	*L*	*CH*
PSY	1101	Human Relations	3	0	3
PHY	1102	Applied Science	3	2	4
MEC	1115	Treatment of Ferrous Metals	2	3	3
DFT	1119	Shop Sketching	0	3	1

*WLD	1103	Inert Gas Welding I	1	4	*2
*WLD	1105	Pipe Welding	1	4	*2
**WLD	1203	Internship I	2	20	**4
			10	16(28)	15

Fourth Quarter

			C	L	CH
*WLD	1104	Inert Gas Welding II	1	4	*2
*WLD	1106	Pipe Welding II	1	4	*2
MEC	1116	Treatment of Non-Ferrous Metals	2	3	3
BUS	1105	Industrial Organizations	3	0	3
ENG	1103	Report Writing	3	0	3
		Elective (Department Approval)	3	2	4
**WLD	1204	Internship II	2	20	**4
			13	13(25)	17

*Not for Cooperative Students
**Cooperative Students Only

COURSE DESCRIPTIONS

AIR CONDITIONING AND REFRIGERATION

AHR 101 Automotive Air Conditioning 2 3 3

General introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms, the methods of operation, and control; proper handling of refrigerants in charging the system.
Prerequisite: PHY 1102.

AHR 210 Winter Air Conditioning 3 2 4

Warm air systems, heat emitters, electric heating, forced hot water and steam heating systems including selection and sizing of equipment — registers, grills, furnaces, boilers, radiators, baseboards, piping, and ducts. Fuels and burners used in supplying heat for various types of heating systems — coal, oil, natural gas, manufactured gas, liquified petroleum gas, and electricity. Experiments in equipment selection, installation adjusting, and servicing will be conducted. Heating layout and specifications for an existing structure or one in blueprint stage will be prepared.
Prerequisite: DFT 232.

AHR 202 Fuels and Burners 2 3° 3

Advanced course in heating systems with emphasis on new type of fuels and burners. Demonstrations and experiments with mock-ups and sample systems of gas, fuel oil and electrical installations. Experiments in equipment selection, installation and maintenance will be conducted.

AHR 209 Air-Conditioning System Design 5 6° 7

Practical procedures and data for calculating heat loss and heat gain in residential structures. Much of the data is secured from the ASHRAE guide and data book.
Prerequisites: AHR 1124, AHR 1126.

AHR 210 Installation and Design Problems 2 6° 4

This course will consist of making drawings and designs that emphasize commercial refrigeration and air-conditioning layouts. Information is gathered, calculations are made, schematic drawings are prepared, and specifications written for the specified installations.
Prerequisites: DFT 232,

AHR 217 Circuits and Controls II 3 3° 4

Practice in layouts, selection, installation and trouble-shooting of conventional refrigeration and air conditioning control systems. Class and laboratory work includes control of residential and commercial heating and air conditioning systems. Control problems of mechanical refrigeration, zone and central-fan systems. Unit heaters and ventilators, peripheral air conditioning units and radiant-panel heating are studied
Prerequisites: AHR 1128.

AHR 228 Air Conditioning Systems & Duct Design 5 6 7

Designed to aid the student in learning to create comfort systems for residence and industrial buildings. The student learns to calculate and specify the required equipment capacity based upon the ASHRAE standards. Practical problems will be used to demonstrate theoretical applications.
Prerequisite: DFT 232.

AHR 230 Seminar and Research 2 6 5

Successful completion of the Air-Conditioning and Refrigeration Technology curriculum is climaxed by the student conducting a research project and writing a report on this project. The student, through consultation with the instructors, will choose an individual project that will, when feasible, involve an actual installation. Frequent conferences with instructor will guide the student in the progress of research and in the preparation of the report.

AHR 1112 Introduction to Air Conditioning 3 3 4

An introduction to the principles of air conditioning, terminology, identification and function of components, properties of refrigerants, and the use and care of tools and equipment. Shop work will include flaring, soldering, and bending tubing. Safety is stressed in the proper use of refrigerant charging equipment.
Prerequisite: None

AHR 1113 Air Conditioning and Heat Controls 3 3 4

A study is made of both electric and pneumatic controls and control systems for maintaining both the proper temperature and humidity. Recommended troubleshooting procedures for these control systems will be covered. Shop work will include installation, adjustment procedures, wiring methods, and troubleshooting practice using the proper testing equipment.
Prerequisite: AHR 1112

AHR 1121 Principles of Refrigeration 5 6 7

An introduction to the principles of refrigeration, terminology, the use and care of tools and equipment, and the identification and the function of the component parts of a system. Other topics to be included will be the basic laws of refrigeration; characteristics and comparison of the various refrigerants; the use and construction of valves, fittings, and basic controls. Practical work includes tube bending, flaring and soldering. Standard procedures and safety measures are stressed in the use of special refrigeration service equipment and the handling of refrigerants.
Perequisite: None.

AHR 1122 Domestic and Commercial Refrigeration 3 9 6

Domestic refrigeration servicing of conventional, hermetic, and absorption systems. Cabinet care, controls, and system maintenance in domestic refrigerators, freezers, and window air conditioning units is stressed. Commercial refrigeration servicing of display cabinets, walk-in-cooler and freezer units, and mobile refrigeration systems is studied. The use of manufacturers catalogs in sizing and matching system components and a study of control, refrigerants, servicing methods is made. The American Standard Safety Code for Refrigeration is studied and its principles practiced.
Prerequisite: AHR 1121.

AHR 1123 Principles of Air Conditioning 5 6 7

Work included the selection of various heating, cooling and ventilating systems, investigation and control of factors affecting air cleaning, movement, temperature, and humidity. Use is made of psychrometric charts in determining needs to produce optimum temperature and humidity control. Commercial air conditioning equipment is assembled and tested. Practical sizing and balancing of ductwork is performed as needed.
Prerequisite: AHR 1122.

AHR 1124 Air Conditioning and Refrigeration Servicing 3 6 5

Emphasis is placed on the installation, maintenance, and servicing of equipment used in the cleaning, changing, humidification and temperature control of air in an air conditioning space. Installation of various ducts and lines needed to connect various components is made. Shop work involves burner operation, controls, testing and adjusting of air conditioning and refrigeration equipment, and location and correction of equipment failure.
Prerequisite: AHR 1123.

AHR 1126 All Year Comfort Systems 3 6 5

Auxilary equipment used in conjunction with refrigeration systems to provide

both heating and cooling for "all year" comfort will be studied and set up in the laboratory. Included will be oil fired systems, gas fired systems, water circulating systems, and electric-resistance systems. Installation of heat pumps will be studied along with servicing techniques. Reversing valves, special types of thermostatic expansion valves, systems of deicing coils, and electric wiring and controls are included in the study.
Prerequisites: AHR 1123, AHR 1128.

AHR 1128 Automatic Controls *3 6 5*

Types of automatic controls and their function in air conditioning systems. Included in the course will be electric and pneumatic controls for domestic and commercial cooling and heating; zone controls, unit heater and ventilator controls, commercial fan systems controls, commercial refrigeration controls, and radiant panel controls.
Prerequisites: ELC 1102, AHR 1122.

Banking and Finance (AIB)

AIB 120 Accounting I *4 0 4*

This course supplies a comprehensive treatment of all up-to-date principles and gives the student ample opportunity through examples, illustrations, and correlated activities to learn how the principles are applied. The course has special sections for both principles and managerial implications.

AIB 121 Accounting II *4 0 4*

The content of this course was selected with two major objectives in mind: (1) Immediate on-the-job usefulness, and (2) contribution to the student's future growth in the banking field. The course consists of a detailed study of balance sheet items, covers manufacturing accounting and product costing, and includes an appropriate study of cost analysis for managerial decisions.

AIB 123 Financing Business Enterprise *4 0 4*

Stress is placed on the difference between lending and investing, and on the fact that investing in a corporation and financing a corporation are different aspects of the same subject. In this course, the material is presented from the viewpoint of the corporate treasurer who must safeguard the financial future of his corporation.

AIB 202 Principles of Bank Operations *4 0 4*

This course presents the fundamentals of bank functions in a descriptive fashion so that the beginning banker may view his chosen profession in a broad (and operational) perspective. The descriptive orientation is intentional. Banking is increasingly dependent upon personnel who have the broad perspective necessary for career advancement.

AIB 203 Bank Investments *4 0 4*

Because the bank's needs for primary reserves and loanable funds limit the funds available for investment, this course describes the nature of such funds and how their uses are determined. It also analyzes the primary and secondary reserve needs of commercial banks, the sources of reserves and their random and cyclical fluctuations, showing the influence of these factors on investment policy. This analysis is followed by a study of yield changes as they affect a bank's long-term holdings.

AIB 205 Bank Management *4 0 4*

This course presents new trends which have emerged in the philosophy and practice of management. Study and application of the principles outlined provide new and experienced bankers with a working knowledge of bank management. Since case study is becoming well established as an effective management learning technique, this course also introduces the use of cases as a new element.

AIB 206 Bank Letters and Reports 4 0 4

This course is designed for those bank officers, supervisors, and employees who dictate or review correspondence. Since bank letters are actually public relations documents, all persons should be familar not only with the mechanical forms of bank letters but also with the psychological principles that help the letter writer achieve best results. The course reviews letter forms, emphasizes fundamental principles underlying modern correspondence, and examines different kinds of bank letters.

AIB 207 International Banking 4 0 4

An introduction to a vast field for those working in international departments as well as for those involved in the domestic activities of their banks. The essential objective of this course is to present the basic framework and fundamentals of international banking: how money is transferred from one country to another, how trade is financed, what the international agencies are and how they supplement the work of commercial banks, and how money is changed from one currency to another.

AIB 209 Installment Credit 4 0 4

In this course the techniques of installment lending are presented concisely. Emphasis is placed on establishing the credit, obtaining and checking information, serving the loan, and collecting the amounts due. Each phase of a bank's installment credit operation should be carefully scrutinized to be certain that the most efficient methods are employed, for only through an efficient operation can a bank maximize its profits on this particular kind of credit. Other topics discussed are inventory financing, special loan programs, business development and advertising, and the public relations aspects of installment lending.

AIB 210 Money and Banking 4 0 4

This course stresses the practical aspects of money and banking and emphasizes the basic monetary theory needed by the banking student to apply his knowledge to his particular job. Historical treatment has been kept to a minimum. Emphasis is also placed on such problems as economic stabilization, types of spending, the role of gold, limitations of central bank control, government fiscal policy, balance of payments, and foreign exchange, showing their repercussions on the banking industry in affecting yield curves and the structuring of portfolios.

AIB 211 Federal Reserve System 4 0 4

This totally new course examines the operations and policies of the Federal Reserve System during the past sixty years. The origins, administrative structure, and crucial periods in the history of the System are reviewed. A treatment of international monetary relations following the end of World War II is also included. The course concludes with a review and analysis of monetary instruments and of the goals of monetary policy.

AIB 213 Trust Functions and Services 4 0 4

This course presents a complete picture of the services rendered by institutions engaged in trust business. Providing an introduction to the services and duties involved in trust operations, the course is intended for all bankers, not only those who are engaged in trust business. It endeavors to keep clear the distinction between business and legal aspects of trust functions.

AIR 214 Effective Speaking 4 0 4

In this course, the student is given an opportunity to study all phases of speech situations. Although the text is directed primarily to the student seeking to give an account of himself on the public platform, other speech situations have not been neglected. Having studied the basic principles involved in organizing and presenting a speech, he is given suggestions to aid him in developing his speaking ability in such situations as conferences, panel discussions, radio, and television.

AIB 219 Credit Administration *4 0 4*

This course, directed toward the executive level, concerns itself partly with a statement and discussion of factors influencing and determining loan policy. Methods of credit investigation and analysis, credit techniques, specific credit problems, and regular as well as usual types of loans are discussed.

AIB 230 Argumentation and Debate *4 0 4*

This course is planned to set forth the principles of argumentation, so that the debater will have the necessary background for the development of his own technique. It describes the analysis of the debate subject, gives the principles of logical argument, and suggests how the case may be presented mose effectively.

AIB 231 Savings and Time Deposit *4 0 4*

This course reflects recognition of the fact that a knowledge of the historical development of savings institutions and awareness of the basic economic function of the savings process are necessary to an understanding of the current operations and policies of these institutions. It begins with a review of the economics of the savings process in order to clarify important differences between financial savings by individuals or organizations and real savings that appear as capital formation. Different types of financial savings are reviewed in order to describe the system of financial flows of income to capital investment.

AIB 232 Agricultural Finance *4 0 4*

Reflecting the rapid growth of the off-farm agribusiness sectors (the suppliers of farm inputs), this course emphasizes general principles associated with the evaluation of management and the use of capital, rather than stressing the examination of land and labor resources, which are more closely aligned with agricultural production. An understanding of agricultural finance should help the banker in satisfying the credit needs of modern agriculture.

ART (ART)

ART 106 History of Art I *3 0 3*

A study of the origins and development of art forms, starting with prehistoric man and succeeding civilizations, Egyptian, ancient Near East, Aegean, Greek, Etruscan, through Roman.

Slides, films, and available audi-visuals will be used to make comparative studies with contemporary forms.
Prerequisite: None.

ART 107 History of Art II *3 0 3*

A continuation of ART 106 proceeding from Roman to early Christian, Byzantine, Islamic, early Medieval Romanesque, Gothic and art through the seventeenth century exploring contributions of each age and civilization to contemporary design.

ART 231 Painting *2 6 4*

An introduction to painting. A study of the techniques used in painting and illustration. Students may select mediums.
Prerequisite: None.

ART 238 Selective Media 1 *2 3 3*

Designed to give students an opportunity to work in a variety of media not otherwise studied.

The media selected to meet the needs and interests of the class will include:

sculpture, ceramics, mono-prints, silk-screen printing, lithography, metal enameling, and painting with oils, polymers, and acrylics.
Prerequisite: None.

ART 239 Selective Media II Continuation of ART 238. 4 2 5

ART 240 Metal Sculpturing 1 3 2

An introduction to metal as a media of expression in time and space. The basic use of welding, brazing, and soldering will be taught.
Prerequisite: DES 210

AUDIOVISUAL TECHNOLOGY (AVT)

AVT 101 Transparency Production 2 2 3

This course provides the skills and techniques necessary to produce transparencies for use with overhead projectors. Among those production methods covered are the thermal, diazo, pressure sensitive, photo copy and photographic processes.
Prerequisite: None.

AVT 102 Slide Production 2 2 3

Designed to equip the student with the skills and techniques to prepare, take and reproduce slides. These slides, usually 2 x 2, may convey information, teach a skill or affect an attitude through group viewing or individual study.
Prerequisite: None.

AVT 103 Filmstrip Production 2 2 3

This course will provide the student with the skills to prepare, take, and reproduce filmstrips using 35 mm film.
Prerequisite: None.

AVT 104 Sound Recording 2 2 3

The student will be introduced to basic sound recording using the three common tape systems. Emphasis will be placed on recording dialogue and sound effects with equipment usually available in schools, institutions, business and industry. Techniques in narration will be practiced and developed.
Prerequisite: None

AVT 110 Office Machines & Filing 3 2 4

A general survey of the business and office machines. Students will recieve training in techniques, processes, operation and application of the thermofax, photo copies, ditto, and stencil machines.

The fundamentals governing filing will also be covered. What records to keep, how to store them, how to find them quickly, and how to apply the criteria for determining their disposition or retention. Included are rules for alphabetic indexing.
Prerequisite: None.

AVT 112 Teaching Methods 3 0 3

Emphasis on the principles and practices of coordinating audio-visual materials with instructional objectives

Consideration is given to learning processes to planning instructional approaches, and to locating and matching media to objectives.
Prerequisite: None.

AVT 210 Equipment Repair 2 2 3

A study in understanding the mechanical and electrical operation of projection equipment, tape recorders, record players, and other magnetic storage devices, covering repair, problem locating and trouble shooting.
Prerequisite: None

AVT 211 Equipment Repair 2 20 4

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

AVT 212 Audiovisual Department Procedures 3 0 3

A study in the techniques of procedural operation of an instructional materials center, a study of the methods of keeping records and data procedures, basic in-service training techniques, physical arrangements, traffic patterns, and sources of equipment and materials.
Prerequisite: None.

AVT 213 AV Department Procedures 3 30 6

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

AVT 220 Information Resources 3 0 3

Operations of literary mechanics: indexes, catalogues, bibliographies, audiovisual software and equipment sources, from which one can secure illustrations, facts to prepare audiovisuals. Emphasis will be placed on how the technician can "unlock" the door to a vast amount of source material with the least bit of effort.
Prerequisite: None.

AVT 230 T.V. Production 2 2 3

A course designed to equip the student with the skills to produce T.V. tapes to play back to a group or individuals in a learning situation. Areas covered will be how to set the equipment up, cameras, monitors and recorders, tape planned sessions, and play them back.
Prerequisite: None.

AVT 231 TV Production 2 20 4

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

AVT 235 Movie Making 2 2 3

The students will learn how to produce 8 mm. movies. Areas covered will be camera operations, filming techniques, script writing, editing and film selection.
Prerequisite: None.

AVT 240 Display Design 2 2 3

To develop techniques and design concepts in the design of bulletin boards, classroom displays, working models and other areas not covered by projected media.
Prerequisite: None.

AVT 245 Work Experience 3 20 5

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

BUSINESS ADMINISTRATION (BUS)

BUS 101 Introduction of Business 5 0 5

A survey of the business world with particular attention devoted to the structure of the various types of business organization, methods of financing, internal organization, and management.
Prerequisite: None.

BUS 102 Typewriting I 2 3° 3

Introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation, and manuscripts.
Prerequisite: None.

BUS 103 Typewriting II 2 3° 3

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript, correspondence, and business forms.
Prerequisite: BUS 102 or the equivalent.

BUS 104 Typewriting III 2 3° 3

Emphasis on production typing problems and speed building. Attention to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscript, correspondence, and business forms.
Prerequisite: BUS 103 or the equivalent.

BUS 105L Legal Production Typing

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and typing projects that closely approximate the work appropriate to the field of study. The student learns to think independently regarding style and method. Projects include review of letter forms, statistical tabulation, typing of reports, manuscripts, and legal documents.
Prerequisite: BUS 205

BUS 105S Typing Office Production 2 3° 3

A course to train the student who possesses basic skills to produce with efficiency typewritten work that would be acceptable in the most exacting business offices. The student learns to think independently regarding style and method.
Prerequisite: BUS 205.

BUS 106 Shorthand I 3 2 4

A beginning course in the theory and practice of reading and writing shorthand. Emphasis on phonetics, penmanship, word families, brief forms, and phrases.
Prerequisite: None

BUS 107 Shorthand II 3 2 4

Continued study of theory with greater emphasis on dictation and elementary transcription.
Prerequisite: BUS 106 or the equivalent.

BUS 108 Shorthand III 3 2 4

Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription.
Prerequisite: BUS 107.

BUS 110 Office Machine 2 2 3

A general survey of the business and office machines. Students will receive training in techniques, processes, operation and application of the ten-key adding machines, full keyboard adding machines, and calculator.
Prerequisite: None.

BUS 111 Secretarial Office Machines 2 2 3

Techniques in operating three basic office machines: ten-key, full-key, and rotary calculator. Problem solving activities that will require students to use cor-

rect machine operation to promote skill development in data processed in the business office.
Prerequisite: None.

BUS 112 Records Management I 3 0 3

Fundamentals governing what records to keep, how to store them, how to find them quickly, and how to apply the criteria for determining their disposition or retention. Included are rules for alphabetic indexing.
Prerequisite: None.

BUS 113 Records Management II 3 0 3

Review of the fundamentals of indexing and filing, combining theory and practice by use of cards, miniature letters, filing boxes and guides. Comprehensive study of alphabetic, geographic, subject, and numeric filing.
Prerequisite: BUS 112.

BUS 115 Business Law 3 0 3

A general course designed to acquaint the student with certain fundamentals and principles of business law, including contracts, negotiable instruments, and agencies.
Prerequisite: None.

BUS 116 Business Law 3 0 3

Includes the study of laws pertaining to bailments, sales, risk-bearing, partnership-corporation, mortgages, and property rights.
Prerequisite: BUS 115.

BUS 120 Accounting I 5 2 6

Principles, techniques and tools of accounting, for understanding of the mechanics of accounting. Collecting, summarizing, analyzing, and reporting information about service and mercantile enterprises, to include practical application of the principles learned.
Prerequisite: MAT 110 or MAT 101.

BUS 121 Accounting II 5 2 6

Partnership and corporation accounting including a study of payrolls, federal and state taxes. Emphasis is placed on the recording, summarizing and interpreting data or management control rather than or bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems.
Prerequisite: BUS 120.

BUS 122 Accounting 5 0 5

Control accounting and additional statements and analyses are covered in this course. Topics include departmental accounting, branch accounting, job order cost system, funds statement and cash flow.
Prerequisite: BUS 121.

BUS 123 Business Finance I 4 0 4

Financing of business units, as individuals, partnerships, corporations, and trusts. Financing federal, state, and local government and the ensuing effects upon the economy. A detailed study is made of short-term, long-term, and consumer financing.
Prerequisite: None.

BUS 130 Secretarial Accounting 5 2 6

Basic principles, procedures, and terminology of accounting, as related to secretarial duties in the business office. Includes making entries, preparing financial statements and analyzing and interpreting financial data.
Prerequisite: MAT 110.

BUS 134 Personality Development 3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

BUS 140 Industrial Accounting 3 2 4

Basic principles of accounting for assets, liabilities, and net worth. Familiarization with the use of accounting data in the industrial setting and with cost accounting theory and practices.
Prerequisite: None.

BUS 183L Terminology and Vocabulary

This course is designed to give the secretary an understanding of the terminology that she will encounter as a legal secretary.

BUS 183M Terminology and Vocabulary 3 0 3

To develop an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in the medical profession.
Prerequisite: None.

BUS 205 Advanced Typewriting 2 3 3

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal documents.
Prerequisite: BUS 104.

BUS 206M Dictation and Transcription 3 2 4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: BUS 108.

BUS 206T Dictation and Transcription 3 2 4

Develops the skill of taking dictation and of transcribing at the typewriter materials appropriate to the course of study, which includes a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed.
Prerequisite: BUS 108.

BUS 207M Dictation and Transcription 3 2 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: BUS 206M.

BUS 207T Dictation and Transcription 3 2 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed, and vocabulary that will enable her to meet the stenographic requirements of business and professional offices.
Prerequisite: BUS 206T.

BUS 208M Dictation and Transcription 3 2 4

Principally a speed building course, covering materials appropriate to the course of study with emphasis on speed as well as accuracy.
Prerequisite: BUS 207M.

BUS 208T Dictation and Transcription 3 2 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy.
Prerequisite: BUS 207T.

BUS 211 Office Machines 2 2 3

Instructions in the operation of the bookkeeping-accounting machines, duplication equipment, and the dictating and transcribing machines.
Prerequisite: BUS 110 or BUS 111.

BUS 212 Machine Transcription 2 2 3

Students develop skill in typing mailable letters, memoranda, and manuscripts directly from recorded belts. Emphasis is placed on vocabulary development, spelling, and word division.
Prerequisite: BUS 102.

BUS 213 Advanced Machine Transcription 2 2 3

Students do more intensive work in transcribing directly from recorded belts. Additional exercises are given to increase vocabulary and improve spelling
Prerequisite: BUS 212.

BUS 214 Secretarial Procedures I 3 2 4

Designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These include the following: The role of the professional secretary, receptionist duties, purchasing equipment and supplies, processing mail, telephone technique.
Prerequisite: None.

BUS 215M Office Application 6 0 6

During the sixth quarter only, students are assigned to work in a medical office for six hours per week. The objective is to provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisites: BUS 214, BUS 205, BUS 208M, BUS 211.

Bus 215T Office Application 6 0 6

During the sixth quarter only, students are assigned to work in a business, technical, or professional office for six hours per week. The objective is to provide actual work experience for secretarial students and an opportunity for the practical application of the skills and knowledge previously learned, according to the course of study.
Prerequisite: BUS 214, BUS 205, BUS 208T, BUS 211.

BUS 216 Reception Techniques 3 0 3

A comprehensive picture of the modern office receptionist's role for business, government, or the profession to focus the student's attention on this vital role and make her aware of the opportunities available through this position. The student is oriented to the office and company and specifics she will face. These include receiving, announcing, and introducing visitors to company personnel, dealing with problem callers, use of telephone equipment, etc.

BUS 217 Business Law 3 0 3

A study of the powers, policies, methods, and procedures used by the various federal, state and local administrative agencies in promoting and regulating business enterprises. It includes a consideration of the constitutional and statutory limitations on these bodies and judicial review of administrative action.
Prerequisite: BUS 116.

BUS 222 Intermediate Accounting I 5 2 6

Thorough treatment of the field of general accounting. The course includes, among other aspects, the balance sheet, income and retained earnings statements, fundamental processes of recording cash and temporary investments, and analysis of working capital.
Prerequisite: BUS 121.

BUS 223 Intermediate Accounting II 5 2 6

Additional study of intermediate accounting with emphasis on investments, plants and equipment, intangible assets and deferred charges, long-term liabilities, paid-in capital, retained earnings, and special analytical processes.
Prerequisite: BUS 222.

BUS 225 Cost Accounting 3 2 4

Nature and purposes of cost accounting; accounting for direct labor, materials, and factory burden; job cost, and standard cost principles and procedures; selling and distribution cost; budgets, and executive use of cost figures.
Prerequisite: BUS 121.

BUS 226S Payroll Records and Accounting 3 0 3

A study in the preparation of the payroll which includes: (1) figuring basic wages, (2) Deducting for taxes (FICA, FUTA, and Federal Income Taxes), and (3) Making necessary journal entries, as well as other problems encountered in preparing the payroll.
Prerequisites: BUS 120 or BUS 130.

BUS 229 Taxes I 2 2 3

Individual income tax preparation. Preparation of returns with emphasis also on schedules which may be required. Included is a study of reporting capital gains and losses.
Prerequisite: BUS 121.

BUS 230 Taxes II 3 0 3

Preparation of income taxes for businesses. Included are partnership and corporation returns.
Prerequisite: BUS 229.

BUS 232 Sales Development 3 0 3

A study of retail, wholesale and specialty selling. Emphasis is placed upon mastering and applying the fundamentals of selling. Preparation for and execution of sales demonstrations required.
Prerequisite: None.

BUS 233 Personnel Management 3 0 3

Principles of organization and management of personnel, procurement, placement, training, performance checking, supervision, remuneration, labor relations, fringe benefits and security.
Prerequisite: None.

BUS 235 Business Management 3 0 3

Principles of business management including overview of major functions of management, such as planning, staffing, controlling, directing, and financing. Clarification of the decision-making function versus the operating function. Role of management in business — qualifications and requirement.
Prerequisite: None.

BUS 237 Wholesaling 3 0 3

The development of wholesaling; present day trends in the United States. A

study of the functions of wholesaling.
Prerequisite: None.

BUS 239 Marketing 5 0 5

A general survey of the field of marketing, with a detailed study of the functions, policies, and institutions involved in the marketing process.
Prerequisite: None.

BUS 242 Sales Promotion 3 0 3

The scope and activities of sales promotion with emphasis on the coordination of advertising, display, special events and publicity. External and internal methods of promoting business; budgeting, planning, and implementing the plan.
Prerequisite: None.

BUS 243 Advertising 3 2 4

The role of advertising in a free economy and its place in the media of mass communications. A study of advertising appeals; product and market research; selection of media; means of testing effectiveness of advertising. Theory and practice of writing advertising copy for various media.
Prerequisite: None.

BUS 244 Purchasing 3 2 4

A study of procedure in obtaining the correct items and quantities of items to provide proper production. To inform the student in the proper procedure in acquiring product at the lowest cost consistent with quality requirement and procedure of delivery of items to meet production schedules.
Prerequisite: None.

BUS 245 Retailing 3 0 3

A study of the role of retailing in the economy including development of present retail structure, functions performed, principles governing effective operation and managerial problems resulting from current economics and social trends.
Prerequisite: None.

BUS 247 Business Insurance 3 0 3

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is included.
Prerequisite: None.

BUS 249 Administration and Supervision in a Pre-School Facility 5 0 5

Designed to assist students in establishing policies and procedures for the operation of a center for the group care of young children. Attention is given to the standards and procedures for licensing and certification. Principles of supervision and techniques for promoting acceptance of a philosophy by the total staff.

BUS 250 Real Estate 3 0 3

A study of the theories and practices in the real estate market. The study includes the legal framework, the economic significance, and the social implications that make up the real estate market.

BUS 267 Auditing 3 2 4

Principles of conducting audits and investigations, setting up accounts based upon audits; collecting data on working papers, arranging and systemizing the audit, and writing the audit. Emphasis is placed on detailed audits, internal auditing, and internal control.
Prerequisite: BUS 223.

BUS 271 Office Management 3 0 3

Presents the fundamental principles of office management. Emphasis on the role of office management including its functions, office automation, planning, controlling, organizing and actuating office problems.
Prerequisite: None.

BUS 272 Principles of Supervision 3 0 3

Introduces the basic responsibilities and duties of the supervisor and his relationship to superiors,subordinates, and associates. Emphasis on securing an effective work force and the role of the supervisor. Methods of supervision are stressed.
Prerequisite: None.

BUS 274 Secretarial Procedures II 3 2 4

This course is designed to give the advanced student the realistic attainable goals of professional secretarial status. The objective is to train the student to be knowledgeable about functions and procedures. Simultaneously, the student should demonstrate a high level of competency in secretarial duties and be able to serve as executive assistant to top management.

Time will also be spent visiting local busineses and industry.

Among the topics covered include the following: Assistance with travel and conferences, collecting, processing and presenting business data, financial and legal facets of secretarial work, professional future — fulfilling the administrative role, insurance claims, payroll and tax duties
Prerequisite: BUS 214.

BUS 284 Terminology and Vocabulary 3 0 3

Greater emphasis on an understanding of the terminology and vocabulary appropriate to the course of study, as it is used in medical offices.
Prerequisite: BUS 183M.

BUS 300S Current Trends in Business 2 3 3

Designed to aid the student to become more aware of current trends in the business world through reading, reporting, informal discussions, and field trips.
Prerequisite: Advance standing in Business Administration.

BUS 1102 Typewriting 2 3 3

A beginning course in touch typewriting, with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, and tabulation.
Prerequisite: None.

BUS 1103 Small Business Operations 3 0 3

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business, and employer-employee relations.
Prerequisite: None.

BUS 1105 Industrial Organizations 3 0 3

Methods, techniques, and practices of modern management in planning, organizing and controlling operations of a manufacturing concern. Introduction of the competitive system and the factors constituting product cost.
Prerequisite: None.

CHEMISTRY (CHM)

CHM 111 General Chemistry I 4 3° 5

An introductory chemistry course involving chemical terminology, fundamental principles, atomic structure, periodic classification of the elements, formulas and equations, the properties of the gaseous, liquid and solid states of matter, properties of mixtures and the various types of compounds, valence and oxidation number, chemical bonds, classification and naming compounds, types of chemical reactions, and solutions are studied as are stoichiometry and energy relationships in chemical changes. Laboratory work emphasizes experiments which yield data that, when analyzed and interpreted, reveal important relationships to lecture topics. When practical the student is told to draw tentative conclusions by assuming that his data is typical of that which would be obtained from a large number of observations.
Prerequisite: None.

CHM 112 General Chemistry 6 4° 8

A continuation of CHM 111. A study of greater depth is made of the properties of the gaseous, liquid and solid state, of concentrations of solutions, of gas law problems and stoichiometry and energy relationships. A detailed study is made of the halogens, reaction rates and chemical equilibrium, ionization and ionic equilibria and oxidation and reduction reactions. Laboratory work consists of various inorganic reactions and preparations, and investigations of properties of solutions.
Prerequisite: CHM 111.

CHM 121 Quantitative Chemical Analysis I 3 6° 5

Emphasis is placed on developing laboratory techniques employed in the volumetric analysis of acids and bases. The students will become thoroughly familiar with the principles and procedures of neutralization titration. Classroom work will emphasize the stoichiometric calculations involved in interpreting the results of analysis. Laboratory work will consist of percentage analysis of selected substances.
Prerequisite: CHM 112

CHM 222 Quantitative Chemical Analysis II 2 9° 5

The more complex types of quantitative analysis. Special emphasis on the theory of oxidation-reduction and gravimetric analysis. Instrumental analysis is introduced and use of modern analytical devices is stressed. The student will become familiar with the principles of redox reactions, ionization constants and pH of solutions. Stress is placed on the stoichiometric calculations of quantitative chemical analysis. Classroom work complements quantitative determinations in the laboratory.
Prerequisite: CHM 121.

CHM 227 Physical Chemistry 3 2 4

Atomic theory, states of matter, chemical thermodynamics, molecular properties of solutions, equilibria, phase role, electrochemistry, kinetics, surface chemistry, and photochemistry constitute major areas of study.
Prerequisite: CHM 121.

CHM 231 Organic Chemistry I 3 6° 5

Nomenclature, structure, preparation, properties, and reactions of aliphatic organic compounds. Laboratory work emphasizes techniques.
Prerequisite: CHM 112.

CHM 232 Organic Chemistry II 3 6° 5

The nomenclature, structure, preparation, properties, and reactions of aromatic organic compounds. Laboratory work emphasizes techniques and involves preparation and analysis of selected organic compounds.
Prerequisite: CHM 231.

CHM 233 Organic Chemistry III 3 6° 6

A continuation of CHM 232. Polymers and other macro molecules will be studied in details with some emphasis on synthetic textile fibers. Laboratory work will be centered around Polymers.
Prerequisite: CHM 232.

CHM 241 Industrial Chemical Analysis I 2 6° 6

An industrial laboratory situation is simulated. Principles and techniques learned in previous quarters are utilized in solution of problems common to local industry. It will be the responsibility of the instructor to determine and submit in outline form a program of suitable scope and sequence of topics which he will work out from consultation with his local advisory committee, representing the industry. This program must be approved by the administration and accepted by the appropriate State-level authority.
Prerequisite: CHM 222.

CHM 242 Industrial Chemical Analysis II 3 12° 7

An industrial laboratory situation is maintained and the emphasis on instrumentation is expanded. Problems on industrial quality control. Plant visitations.
Prerequisite: CHM 241.

CHM 250 Qualitative Inorganic Analysis 4 4 6

Lectures involve the practice and theory which underlie the ways and means by which substances can be identified. Specifically the concern is finding out which cations (metallic ions and ammonium ion) and anions (acid radicals) are present in substances and mixtures of substances. Laboratory practice involves the separation and indentification of a few common and representative cations and anions in a variety of unknowns.
Prerequisite: CHM 112.

CHM 252 The Chemistry of Living Systems 3 2° 4

This course is an elective for Chemical Technology students. It relates basic chemistry to living systems. In the laboratory the student acquires basic techniques for laboratory study of the structures and functions of organisms. Application is also made to laboratory techniques used in related fields.
Prerequisites: CHM 205, 121.

DENTAL (DEN)

DEN 1001 Introduction to Dental Assisting 2 0 2

An introduction to the history of dental assisting, the modern role of the dental assistant in practice and in relation to other members of the dental health team, and the personal and ethical requirements for safe and effective practice.
Prerequisite: None.

DEN 1002 Dental Materials 2 9 5

Identification of dental materials, characteristics of each, evaluation of quality, and principles and procedures related to manipulation and storage of various dental materials.
Prerequisite: None.

DEN 1003 Preclinical Sciences I *3 3 4*

Basic information from nutrition, anatomy and physiology, and oral and dental anatomy as related to dental science and the practice of dental assisting. Designed as three units which may be scheduled for either concurrent or sequential teaching.
Prerequisite: None.

DEN 1004 Preclinical Sciences II *4 0 4*

Fundamental information from oral pathology, pharmacology, bacteriology, and common emergencies as related to the role of the dental assistant. Designed in four units to permit flexibility in scheduling.
Prerequisite: DEN 1003.

DEN 1005 Dental Office Management I *3 2 4*

Fundamentals of accounting as applied to dental office procedures. Practice in application of principles to various forms commonly used in the dental office.
Prerequisite: None.

DEN 1006 Clinical Procedures I *3 6 5*

Principles and procedures related to radiology, dental instruments and equipment, and chairside techniques of dental assisting. Designed in three units for flexibility in scheduling.
Prerequisite: DEN 1002.

DEN 1007 Clinical Procedures II *4 6 6*

Role of the dental assistant in various dental specialties, such as endodonics, periodontics, orthodontics, prosthodontics, and oral surgery.
Prerequisite: DEN 1006.

DEN 1008 Dental Office Management II *3 0 3*

Principles and procedures related to management of the dental office, including maintenance of inventories, ordering of supplies, patient records, financial records, making appointments and establishing favorable patient relations.
Prerequisite: DEN 1005.

DEN 1009 Dental Office Practice I *0 12 4*

Introduction to practice in the dental office or dental clinic, emphasis is on the role of the dental assistant in the operatory in a variety of dental procedures.
Prerequisite: DEN 1008.

DEN 1010 Dental Office Practice II *0 27 9*

Practice in the dental office or dental clinic; rotation of assignments to encompass experience in office management, the dental laboratory, and the operatory. Emphasis on chairside assisting in a variety of clinical procedures.
Prerequisite: DEN 1009.

DEN 1012 Dental Roentgenology *2 6 4*

Study of principles related to exposing, processing, and mounting dental x-ray. Radiation hazards and safety measures employed for protection of patient and self are stressed.

DEN 1013 Oral Health Education *1 2 2*

Designed to present information on deposits and stains, dental caries and periodontal disease as related to prevention and control with emphasis on development of self confidence in interpreting dental health information and in demonstrating techniques to individuals and groups.

DESIGN (DES)

DES 101 Basic Drawing and Design 4 8 8

An introduction to drawing and basic design fundamentals and principles. Emphasis will be placed on line, two and three-dimensional shapes, perspective, light and shade, equipment and materials of the art and design profession.

DES 102 Drafting for Art 2 4 4

An introduction to drafting principles with the art student in mind. The normal drafting skills of orthographics, dimensioning, geometric construction and lettering are taught. There is an emphasis on pictorial drawing which will be useful to the applied artist in the field of commercial art. The subjects of isometric views and perspective are considered in their role of visual art.

DES 107 Drawing 2 4 4

A study of the body structure. A live model will be used with emphasis on proportioning, masses and movement.

DES 108 Illustration 0 6° 2

Continuation of DES 107. Using the figure as our environmental element in simulated daily activities. Distortion of the figure in the form of cartoons, illustrations, and other experimental use.
Prerequisite: DES 107.

DES 110 Creative Problem Solving 3 0 3

The aim of this course is to improve attitudes and thinking abilities, to develop a strong innovation to utilize one's creative potential, to develop a greater curiosity in problem solving, and to gain open-mindedness toward ideas of others. Special emphasis is placed on individual and group brain storming through the creative problem solving process.

DES 116 Basic Photography 2 4 4

An introduction to the field of photographs, photographic equipment and materials. A study of the fundamental techniques of the camera and its expressive possibilities in relation to the field of design and visual communications. Assigned camera projects, darkroom procedures and equipment.
Prerequisite: None.

DES 124 Type and Lettering 4 6 7

Hand lettering, equipment and materials, type, and copy fitting. Emphasis will be placed on the use of type and lettering as an element of visual communications.

DES 205 Perspective I 2 4 4
DES 206 Perspective II 2 4 4
DES 207 Perspective III 2 4 4

A study of the principles and problems of perspective in modern day illustration. One, two and three-point perspective as well as the various projection methods are explored. DES 206 and 207 are continuations of DES 205 and provide an in-depth study for the advanced student.
Prerequisite: None for DES 205.

DES 210 Advertising and Publication Design I 3 0 3

An introduction to cartooning, intermediate layout and design techniques for printing. Laboratory assigned graphical problems will cover such topics as color separation, halftones, and materials for the development of posters, show cards, banners, hand-lettered documents, brochures and folders.
Prerequisite: DES 218.

DES 211 Three Dimensional Design 1 3 2

The student will have an opportunity to depart from the two-dimensional and work with elements in the round. Using a combination of materials the student will exercise his creativity with problems such as free forms, mobiles and packaging.

DES 216 Photography II 3 4 5

Designed to acquaint the student with large format cameras, filter use in black and white and color photography, auxiliary lenses in 35 mm. format (wide-angle and telephoto), macrophotography, artificial light photography including strobe lighting, studio lighting, color slide photography and development, basic retouching and air brush techniques, slide and negative manipulation (sandwiching, double exposure).
Prerequisite: Photography I

DES 218 Commercial Graphics and Photography 3 6 6

Introduction to layout and design for printing. Mechanicals and basic printing reproductive processes.
Prerequisite: DES 124.

DES 220 Advertising and Publication Design II 3 0 3

Advanced problems in layout and design techniques for printing, illustration, cartooning, animation display design and lettering. Laboratory and graphic problems dealing with magazine and book illustration, the fashion figure, outdoor sign writing, displays and exhibits for business and industry.
Prerequisite: DES 210.

DES 230 Advertising and Publication Design III 3 0 3

A course providing simulated professional working conditions utilizing advanced layout and design techniques for printing. Each student will explore a variety of problems, and present his solutions for general class critique and discussion. This course will climax with the review and presentation of the student's individual portfolio of professional work.
Prerequisite: DES 220.

DES 231 Advertising and Publication Design 1 30 4

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 238 Case Studies 3 0 3

Studies, discussions and analysis of advertising cases of recent past — up to the present, involving advertising campaigns of various companies and their different marketing strategies.

DES 239 Professional Practices and Procedures 3 6 6

On the job conduct and day to day operating policies, procedures, organization and direction of art in studios, free-lance, advertising agencies, industrial art departments and retail art departments. Simulated and actual job experiences.

DES 240 Production I 3 6 6

An introduction to the mechanical requirements for the reproduction of art work. A study of Graphic Arts terminology and techniques of existing printed material.

DES 241 Production I 3 30 6

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 242 Production II 3 6 6

Continuation of Production I with emphasis on the physical requirements of art work and production techniques for offset and letterpress printing of brochures, folders and small publications.

DES 243 Production II 3 30 6

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 244 Production III 3 6 6

Continuation of Production II with emphasis on effective, efficient planning and production of art work for large publications.

DES 245 Architectural Rendering I 2 3° 3

Application and presentation of architectural subjects through the use of various kinds of materials and techniques of rendering.
Prerequisite: None

Des 246 is a continuation of DES 245. 2 3° 3

DES 248 Air Brush 2 3° 3

This course is designed to develop a working knowledge of air brush maintenance and fundamentals such as, line work, flat washes, graded washers, rendering basic forms, transparent and opaque colors; techniques used in rendering pictorial forms, such as products, figures, technical and architectural — including photo retouching.
Prerequisite: DES 239.

DES 249 Production III 3 30 6

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 250 Technical Illustration I 3 6 6

Introduction to Technical Illustration. A study of isometric theory dealing with basic tools and equipment. Continuation of orthographic and three dimensional Drawing.
Prerequisite DES 102.

DES 251 Technical Illustration II 3 9° 6

A continuation of the study of technical illustration theory, tools and equipment. Cartooning and rendering techniques are explored.
Prerequisite: DES 250.

DES 252 Technical Illustration III 3 9° 6

A development of the techniques necessary to utilize the materials and equipment of the illustrator. A study of axonometric theory and use in illustrations. Project materials from previous courses will be used as problem assignments.
Prerequisite: DES 251.

DES 253 Technical Rendering I 2 4 4
DES 254 Technical Rendering II 2 4 4
DES 255 Technical Rendering III 2 4 4

Introduction to the various techniques of three-dimensional perspective of products and machine parts. Tone drawings and tempera, in black and white, are utilized. DES 254 and 255 are continuations of DES 253, advancing into color aspects of rendering utilizing and various media available to the contemporary illustrator.
Prerequisite: DES 102.

DES 259 Professional Practices & Procedures 3 30 6

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 262 Technical Publications 2 3° 3

A study of methods of producing diagrams and handbook illustrations for technical publications.
Prerequisite: DES 251.

DES 271 Technical Illustration II 3 30 6

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 272 Architectural Rendering I 3 20 5

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 273 Technical Illustration III 3 30 6

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DES 274 Architectural Rendering II 3 10 4

A cooperative education experience whereby the student serves an internship on-the-job under actual working conditions.

DRAFTING (DFT)

DFT 101 Technical Drafting 2 4 3

The field of drafting is introduced as the student begins study of drawing principles and practices for print reading and describing objects in the graphic language. Basic skills and techniques of drafting included are: use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning. The principles of isometric, oblique, and perspective are introduced.
Prerequisite: None.

DFT 102 Technical Drafting 2 4 3

The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions will be studied. Most important is the introduction of the graphic analysis of space problems. Problems of practical design elements involving points, lines, planes, and a combination of these elements shall be studied. Dimensioning practices for "details" and "working drawings," approved by the American Standards Association will also be included. Introduction is given to intersections and developments of various types of geometrical objects.
Prerequisite: DFT 101.

DFT 103 Technical Drafting 1 6° 3

Intersection and developments and their practical solutions. Where applicable, model solutions accompany the problems. The various techniques employed to produce and render isometric and oblique drawings, isometric, dimetric and trimetric projections, will be included.
Prerequisite: DFT 106.

DFT 106 Blueprint Reading: Mechanical 1 3 2

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts

and mechanisms for features of fabrication, construction and assembly.
Prerequisite: DFT 110.

DFT 118 Drafting and Blueprint Interpretation 0 6 2

Basic drafting techniques are covered to provide a working knowledge of drafting as a tool for communicating ideas. Reading and interpreting of blueprints is emphasized.
Prerequisite: None.

DFT 201 Technical Drafting 2 6° 4

Applications and constructions of charts, graphs, and nomographs in engineering and technical data. Screw threads, springs, keys, rivets, piping, and welding symbols, methods of representing and specifying will be covered. Basic mechanisms of motion transfers, gears and cams, will be studied and drawn with emphasis on methods of specifying, calculating, dimensions, and delineating.
Prerequisite: DFT 103.

DFT 204 Descriptive Geometry 2 4 4

Graphic analysis of space problems involving points, lines, connectors, and combination of these. Practical design problems will be stressed with analytical verification where applicable. Visualization shall be stressed on every problem.
Prerequisite: DFT 102.

DFT 205 Design Drafting I 2 6° 4

Basic design is introduced in the study of motion transfer mechanisms as they relate to power trains. Principles of design sketching, design drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices constitute areas of study. Types and methods of specifying materials and workmanship are an integral part of the course.
Prerequisites: DFT 204, MAT 102, PHY 102.

DFT 206 Design Drafting II 2 6° 4

Research to solve a problem in design by consulting various manuals, periodicals, and through laboratory experiments. A written technical report, preliminary design sketches, layout drawings, detail drawings, assembly and sub-assembly drawings, pictorial drawings, exploded pictorial assembly, patent drawings and specifications are required as a part of the problem.
Prerequisites: DFT 205, MEC 210.

DFT 211 Mechanisms 3 2 4

Mathematical and drafting room solutions of problems involving the principles of machine elements. Study of motions of linkage, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears and gear trains.
Prerequisites: DFT 201 & 204, MAT 103, PHY 106.

DFT 212 Jig and Fixture Design 2 6° 4

Commercial standards, principles, practices and tools of jig and fixture design. Individual project and design work to acquaint students with the types of jigs and fixtures and their design.
Prerequisites: DFT 205, DFT 211.

DFT 226 Air-Conditioning Systems Drawing 0 6° 2

Drawing of air-conditioning systems and study of related architectural and structural elements. Sheet metal intersections and developments and types of duct installation. Air-conditioning and refrigeration layouts, diagrams, and schematics.
Prerequisites: DFT 102, AHR 103, AHR 201, AHR 216.

DFT 232 AHR Drafting 2 4 3

Drawing of air-conditioning systems and study of related architectural elements. Emphasis will be placed on preparing orthographic and isometric presentations of duct systems, mechanical layouts, piping installations, electrical schematics and diagrams.
Prerequisite: None.

DFT 240 Senior Project 2 6° 4

A project designed to allow the students in-depth study of his major relating to the student's individual interest and concepts. The project will focus cumulative knowledge in one comprehensive problem which will reflect updated concepts within the field.
Prerequisite: Permission of instructor.

DFT 1100 Basic Mechanical Drawing 1 3 2

A beginning course in basic mechanical drawing, technical sketching and interpretation of machine drawings and blueprints. Emphasis is placed upon neatness, accuracy, proper care and use of instruments.

DFT 1101 Schematics & Diagrams: Power Mechanics 0 3 1

Interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals, and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures, and notes.

DFT 1104 Blueprint Reading: Mechanical 0 3 1

Interpretation and reading of blueprints. Information on the basic principles of the blueprint; lines, views, dimensioning procedures and notes.
Prerequisite: None.

DFT 1105 Blueprint Reading: Mechanical 0 3 1

Further practice in interpretation of blueprints as they are used in industry; study of prints supplied by industry; making plans of operations; introduction to drafting room procedures; sketching as a means of passing on ideas, information and processes.
Prerequisite: DFT 1104.

DFT 1106 Blueprint Reading: Mechanical 1 3 2

Advanced blueprint reading and sketching as related to detail and assembly drawings used in machine shops. The interpretation of drawings of complex parts and mechanisms for features of fabrication, construction and assembly.
Prerequisite: DFT 1100.

DFT 1113 Blueprint Reading (Electrical) 1 3 2

Interpretation of schematics, diagrams and blueprints applicable to electrical installations with emphasis on electrical plans for domestic and commercial buildings. Sketching schematics, diagrams, and electrical plans for electrical installations using appropriate symbols and notes according to the applicable codes will be a part of this course.
Prerequisite: DFT 1100.

DFT 1116 Blueprint: Air Conditioning 1 3 2

A specialized course in drafting for the heating, air conditioning and refrigeration student. Emphasis will be placed on reading of blueprints that are common to the trade; blueprints of mechanical components, assembly drawings, wiring diagrams and schematics, floor plans, heating system plans including duct and equipment layout plans, and shop sketches. The student will make tracings of

floor plans and layout air conditioning systems.
Prerequisite: DFT 1104.

DFT 1119 Shop Sketching	*0*	*3*	*1*

Development of accurate freehand sketches of welded parts, visual solution in orthographic and pictorial will be rendered with basic dimensions. Speed, accuracy and neatness will be emphasized.
Prerequisite: None.

DFT 1120 Drafting I	*2*	*4*	*4*

An introduction to drafting and the study of drafting practices. Instruction is given in the selection, use and care of instruments, singlestroke lettering, applied geometry, freehand sketching consisting of orthographic and pictorial drawings. Orthographic projection, reading and instrument drawing of principal views, single auxiliary views (primary), and double (oblique) auxiliary views will be emphasized. Dimensioning and note practices will be studied with reference to the American Standards Association practices. Methods of reproducing drawings will be included at the appropriate time.
Prerequisite: None.

DFT 1121 Drafting II	*2*	*4*	*4*

A Continuation of DFT 1120.
Prerequisite: DFT 1120.

DFT 1122 Drafting III	*2*	*4*	*4*

The trainee will study simple and successive revolutions and their applications to practical problems. Sections and conventions will be studied and both detail and assembly sections will be drawn. Intersections and developments will be studied by relating the drawing to the sheet metal trades. Models of the assigned drawings will be made from construction paper, cardboard, or similar materials as a proof of the solution to the problems drawn.

Methods of drawing and projecting axonometric, oblique, and perspective drawings will be studied with emphasis on the practical applications of pictorial drawings. Various methods of shading will be introduced and dimensioning and sectioning of oblique and axonometric pictorials will be done.
Prerequisite: DFT 1121.

DFT 1123 Drafting IV	*2*	*4*	*4*

A continuation of DFT 1122.
Prerequisite: DFT 1122.

DFT 1125 Descriptive Geometry	*2*	*3*	*3*

Graphical analysis of space problems. The problems deal with practical design elements involving points, lines, planes, connectors, and a combination of these. Included are problems dealing with solid geometry theorems. Where applicable, each graphical solution shall be accompanied by the analytical solution.
Prerequisite: DFT 1121.

DFT 1130 Drafting V	*2*	*4*	*4*

An introduction to mechanical drafting beginning with problems concerning precision and limit dimensioning. Methods of fastening materials, and fasteners: keys, rivets, springs, and welding. Symbols will be studied and drawings will be made in involving these items. Principles of design will be introduced with the study of basic mechanisms of motion transfer; gears, cams, power trains, pulleys, belting and methods of specifying and calculating dimensions will be studied. Drawings will be made involving these mechanisms.
Prerequisite: DFT 1123.

DFT 1131 Drafting VI *2 4 4*

A continuation of DFT 1130.
Prerequisite: DFT 1130.

DFT 1132 Drafting VII *2 4 4*

Principles of design sketching, design drawings, layout drafting, detailing from layout drawings, production drawings and simplified drafting practices constitute areas of study. Forging and casting drawings will be made from layouts. Specifications, parts list and bill of materials are emphasized in this course. The student will develop a complete set of working drawings of a tool, jig, fixture or simple machine and learn principles of design, handbook and manual usage.
Prerequisite: DFT 1131.

DFT 1133 Drafting VIII *2 4 4*

A continuation of DFT 1132.
Prerequisite DFT 1132.

DFT 1150 Duct Layout and Fabrication *2 4 4*

Work in drafting room with instruments developing patterns on paper for popular duct fittings. Proper layout procedures are followed in work on paper including square and radius elbows, offsets, transitions, "y" branches and square to round fittings.

DFT 1220 Shop Sketching *0 3° 1*

Development of accurate freehand sketches of machine parts, visual solution in orthographic and pictorial will be rendered with basic dimensions. Speed, accuracy and neatness will be emphasized.
Prerequisite: None.

DFT 1121 Machinist Drafting I *0 4 2*

A course designed to familiarize students with drafting equipment, procedures, and techniques. Emphasis to be placed on 3-view drawing solutions with dimensions.
Prerequisite: DFT 1220.

DFT 1222 Machinist Drafting II *0 4 2*

An advanced course in drafting practices. More details, assemblies, sub-assemblies and reproduction processes will be included. Emphasis will be placed on accuracy, neatness, speed, and legibility.
Prerequisite: DFT 1221.

ECONOMICS (ECO)

ECO 102 Economics *3 0 3*

The fundamental principles of economics including the institutions and practices by which people gain a livelihood. Included is a study of the laws of supply and demand and the principles bearing upon production, exchange, distribution, and consumption both in relation to the individual enterprise and to society at large.
Prerequisite: None.

ECO 104 Economics *3 0 3*

Greater depth in principles of economics, including a penetration into the composition and pricing of national output, distribution of income, international trade and finance, and current economic problems.
Prerequisite: ECO 102.

ECO 201 Labor Economics and Labor Relations 3 2 4

Emphasis is placed on the history of the labor movement in the United States, the development of methods and strategies by labor organizations and by management, the shift in the means of public control; and the factors of income and economic security.
Prerequisite: ECO 104.

ELECTRICAL (ELC)

ELC 101 Fundamentals of Electricity 4 *4 or 6* 6

Elementary principles of electricity including: basic electric units, Ohms law, Kirchhoffs law, network theorems, magnetics, basic electrical measuring instruments, inductance, capacitance, sine wave analysis, and non-resonant resistive, inductive and capacitive networks.
Prerequisite: None.

ELC 102 Fundamentals of Electricity 4 4 or 6 6

Series and parallel resonant-circuit analysis, resonant and non-resonant transformer analysis, basic diode power supply analysis, introduction to nonlinear resistive control devices, and introduction to electro-mechanical devices.
Prerequisite: ELC 101.

ELC 1101 Electrical Fundamentals I 3 3 4

A study of the electrical structure of matter and electron theory; the relationship between voltage, current, and resistance in series, parallel, and series-parallel circuits. An analysis of direct current circuits by Ohm's Law and Kirchhoff's Law. A study of the sources of direct current voltage potentials.

ELC 1102 Applied Electricity 2 3° 3

The use and care of test instruments and equipment used in servicing electrical apparatus for air conditioning and refrigeration installations. Electrical principles and procedures for trouble-shooting of the various electrical devices used in air conditioning, heating, and refrigeration equipment. Included will be transformers, various types of motors and starting devices, switches, electrical heating devices and wiring.
Prerequisite: PHY 1101.

ELC 1103 Electrical Fundamentals II 3 3 4

Fundamental concepts of alternating current flow, reactance, impedance, phase angle, power, and resonance. Analysis of alternating current circuits.
Prerequisite: ELC 1101.

ELC 1112 Direct and Alternating Current 5 15° 10

A study of the structure of matter and the electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. Analysis of direct current circuits by Ohm's law and Kirchhoff's law; sources of direct current potentials. Fundamental concepts of alternating current flow; a study of reactance, impedance, phase angle, power and resonance and alternating current circuit analysis.
Prerequisite: None.

ELC 1121 Electrical Machines & Controls 2 2 3

Provides fundamental concepts in single and polyphase alternating current circuits, voltages, currents, power measurements, transformers, and motors. Instruction in the use of electrical test instruments of circuit analysis. The basic concepts of AC and DC machines and simple system controls. An introduction to the type control used in small appliances such as thermostats, timers, or sequencing switches.
Prerequisites: ELC 1101, MAT 1102.

ELC 1122 Electrical and Mechanical Maintenance 3 6 5

A study is made of those parts of the electrical code which affect the work of the industrial maintenance electrician. Practical experience is provided in wiring, installing and connecting the various types of services for lighting, heating and power installations. Training is provided in trouble-shooting in the identification and testing of circuits, in making mechanical adjustments and related maintenance operations on various machines. Schematic diagrams showing the plan of operation for each system, electrical or mechanical, are used.
Prerequisite: ELC 1121.

ELECTRONIC DATA PROCESSING (EDP)

EDP 103 Introduction to Computer Concepts 4 0 4

An introductory course in computers for the student who plans to pursue the degree in data processing as well as the student who desires a general non-technical knowledge of terminology and concepts. No previous knowledge or experience in data processing is required.

EDP 105 Keypunching 2 6 4

A study of the keypunch machine. Instruction emphasizes the correct techniques, mastery of the keyboard and development of speed and accuracy. The student learns and drills on the numeric keyboard, the alphameric keyboard and program drum card and preparation and use.
Prerequisite: None

EDP 114 Compiler Language I 2 4 4

A fundamental course in Fortran or PL/1 programming. The Fortran or *PL*/1 language structure, statements and programming methods and techniques are studied. The student will develop program logic and programs for solving sample problems.
Prerequisite: EDP 103.

P 116 Assembler Language 2 4 4

The study of symbolic computer languages with emphasis on a particular example of such a language. The student will develop program logic and write programs using assembly language to solve appropriate assigned problems.
Prerequisite: EDP 103.

EDP 118 Compiler Language II 2 4 4

This course is designed to provide basic training in COBOL programming. The COBOL language structure, statements, and programming methods and techniques are studied. The student will develop program logic and write COBOL programs for solving sample problems.
Prerequisite: EDP 103.

EDP 122 RPG Language 2 4 4

A basic course in the Report Program Generator II Language. Language structure, programming techniques and methods of reporting are studied. The student will use RPG to solve assigned problems.
Prerequisite: EDP 103.

EDP 211 Data Processing Application I 2 4 4

This course is designed to provide the student with sufficient knowledge in computer methodology to permit the use of computers in business. Emphasis will center around the use of the Fortran language to solve both business and scientific type problems encountered in the business environment. Statistical analysis will be studied as an aid to business decision-making.
Prerequisites: EDP 114, MAT 214.

EDP 212 Data Processing Application II 2 4 4

This course is designed to afford the student the opportunity to get into more complex problem solving. The SORT feature and the REPORT WRITER feature are also studied and applied to problems.
Prerequisite: EDP 118.

EDP 213 Computer Systems I 2 2 3

A study of computer systems involving such concepts of architecture and/or programming as channels, interrupts, etc. This course also provided a continuing study of Assembler Language and a study of data set storage devices and methods of data set organization.
Prerequisite: EDP 116.

EDP 214 Computer Systems II 2 2 3

A continued study of computer systems. This course will include: a study of job control language, programming for data sets, and a closer look at an operating system. Hardware systems will be included through a study and comparison of systems currently available.
Prerequisite: EDP 213.

EDP 215 Statistical Programming 2 4 4

Practical experience in the statistical solution of business problems through the use of computers. Measures of central tendency, variation, confidence intervals, tests of hypothesis, and relationships between variables. Methods of organizing, analyzing, interpreting and presenting data are studied.
Prerequisites: EDP 114, MAT 214.

EDP 217 Numerical Analysis Programming 2 4 4

A development of the mathematical principles upon which many computing methods are based. Topics introduced include theory of errors, numerical integration and differentiation, summation procedures, numerical solution of equations, and approximations of various types.
Prerequisites: EDP 114, MAT 201.

EDP 218 Data Processing Project 1 8 5

Individual assignments of a carefully selected project will be the work of the student during this course. It will give the student an opportunity to initiate and carry out a project taken from outside the school. This course places the responsibility upon the student to solve a significant problem with a minimum of assistance from the instructor.
Prerequisite: Sixth quarter standing and approval of instructor.

EDP 231 Computer Language Survey 3 0 3

This course is designed to provide additional programming languages to the student. The languages to be studied are subject to be changed depending on what the most popular languages are at the time this course is being taught. The intent of the course is to broaden the students' knowledge of programming languages.
Prerequisites: EDP 114, EDP 116, EDP 118.

EDP 234 Linear Programming 3 0 3

Lecture and problems encompassing the scope and potential of using mathematical programming with computers to increase industrial efficiency. This course presents the network technique of management planning, scheduling and control. Basic rules of network planning are presented with laboratory assignments designed to implement the theoretical aspects of Critical Path Method (CPM).
Prerequisite: Fifth quarter standing.

EDP 240 Use of Package Programs 2 2 3

A study of how to effectively use programs and packages that are available to save on actual programming time. Lectures and lab assignments will be given in the use of both user written and manufacturer supplied routines. Basic contents will include: Statistical Analysis Systems (SAS), Tele-Storage and Retrieval Systems (TSAR) and the IBM Utilities for System/360.
Prerequisite: EDP 214.

EARLY CHILDHOOD EDUCATION (EDU)

EDU 101 Activities for Young Children 5 0 5

Individual and group exploration of activities and media for promoting optimal development of children. Designed to develop an appreciation for this need for play and the activities appropriate at various stages of development.

EDU 103 Music in the Early Childhood Program 3 0 3

Designed to develop an awareness of the fundamentals of music and the types of music appropriate for young children. Study of the various methods of integrating music into the total program of activities and utilizing a wide variety of materials for rhythm, instrumental performance, dramatic play and singing.

EDU 105 Science 3 2 4

Study of basic concepts from biological, physical and natural sciences. Laboratory experiences provide opportunities to develop projects for demonstrating simple science concepts to young children, utilizing materials from nature and simple equipment. Each student will develop a series of projects appropriate for a specific level of development.

EDU 108 Art in the Early Childhood Program 3 2 4

Study of art media in relation to the creative process in young children, of the educational component that each medium reinforces, and of the ways a variety of low-cost art activities can be incorporated into a program for young children, Laboratory sessions provide first-hand experience with all of the media, opportunities to explore the uses of each, and practice in the care and storage of materials. Each student will plan a meaningful sequence of art activities which could be incorporated into a program for young children.

EDU 130 Programming for Young Children 3 3 4

Study principles and practices of early childhood education — the types of experiences, facilities, and media which will promote optimal development of each child. Opportunities to observe various types of early childhood programs will be provided. Techniques of observation will be explored.

EDU 132 Nutrition and Health 5 0 5

(1) Study of the influence of physical and emotional health from infancy to adulthood. The practices and procedures for promoting good health among children in group care will be emphasized.

(2) Study of basic nutrition with emphasis on the importance of balanced diet in growth and maintenance of healthy children.

EDU 135 Human Growth and Development I 5 0 5

A study of the developmental sequence of the prenatal, infant and early childhood periods. Emphasis is given to the factors influencing development and the importance of experiences in establishing patterns of behavior, attitude and interpersonal skills.

EDU 140 Working with Young Children I 3 9 6

Designed to develop skill in adapting activities to the individual needs of

children at the pre-school level and to develop an understanding of, basic methods of concept and language development. Designed to develop insight into the student's own attitude and biases as a basis for self-understanding and increased capacity for relating to children.
Prerequisite: EDU 130, 101, 135, 132.

EDU 145 Working with Young Children II *3 9 6*

Designed to give the student an awareness of the basic programs of the primary grades with emphasis given to development of language arts and computational skills. Experiences will orient the student to the duties of the teachers' assistant in the primary grades.
Prerequisite: EDU 140.

EDU 148 Group Care of Infants *3 6 5*

A review of development from birth to age three. An in-depth study of the problems specific to group care of children under three. Techniques for the care and guidance of the infant will be studied, as will the providing of optimum safety, stimulation, and warmth.
Prerequisite: EDU 135, 132.

EDU 202 Seminar-Practicum in Pre-School *4 15 9*

Advanced program of supervised practice in the care and education of the pre-school child.
Prerequisite: EDU 140, 145.

EDU 203 The Exceptional Child *3 12 7*

Study of children with developmental variations requiring modification in activities. Consideration is given to recognition of problems, community resources, and appropriate activities for the child with exceptional deviations in personality or physical development. Lab experience provides the opportunity to assist in the care and education of the exceptional child.
Prerequisite: EDU 135, 140.

EDU 204 Parent Education *3 0 3*

Study of ways parents can be involved in the child development center, of the purposes and value of home visitation, and of the techniques for reporting child progress to parents. The role of the early childhood assistant in aiding parents in the guidance of the child's development is emphasized. Each student will develop a series of programs appropriate for presentation to the parents of pre-school children.

EDU 227 Programming Through Learning Resources *3 0 3*

Introduction to the multi-media approach to teaching young children. Students will have the opportunity to explore all phases of the library, including cataloguing, reference materials, periodicals and special services such as storytelling. Experiences will be provided in the use of audio-visual equipment, basic office machines, and the care and repair of books. Experience with a laminating process, making transparencies, placing orders for films, and other visual aids, will be provided.

EDU 236 Human Growth and Development II *5 0 5*

A detailed study of the developmental sequence during middle childhood and adolescence; including the enviromental and social factors which influence developmental rates, the formulation of behavior patterns, and establishment of value systems and interests.
Prerequisite: EDU 135.

EDU 250 Special Problems *3 0 3*

Directed study of a specialized area of early childhood, appropriate to the individual career interests of students.
Prerequisite: EDU 140,145.

EDU 252 Seminar-Practicum in the Elementary School *4 15 9*

Advanced program of supervised practice as an assistant in the education of the child age 5 to 8.
Prerequisite: EDU 140, 145, 202.

ELECTRONICS (ELN)

ELN 101 Electronic Instruments and Measurements *1 4 or 6 3*

A study of basic electronic instruments, their theory of operation, function, tolerances, and calibration. Both service and laboratory instruments will be studied. Laboratory experience will provide application of each type instrument studied.
Prerequisite: ELC 102.

ELN 105 Control Devices *5 4 or 6 7*

A study in depth of the electrical characteristics of vacuum tubes and transistors. Basic parameters and applications of each type device to the three configurations of a three terminal two port system will be included.
Prerequisite: ELC 102.

ELN 205 Applications of Vacuum Tubes and Transistors 5 4 or 6 7

Practical applications of vacuum tubes and transistors to basic audio amplifiers, radio frequency amplifiers, detectors, modulators and ocsillators.
Prerequisite: ELN 105.

ELN 208 Integrated Circuits *1 6 4*

A study of the processes by which thin-film and semiconductor circuits are fabricated. Oxide isolation and metal-oxide-semiconductor field-effect transistors are covered at length.

Various types of applications are presented such as, logic networks, the computer-on-a-slice concept, the use of feedback in integrated circuits, tuned integrated circuits, thin-film thermollectrics, and microwave applications of integrated-circuit techniques.
Prerequisite: CHM 111.

ELN 210 Semiconductor Circuit Analysis *5 2 or 3 6*

A study in some depth of the analysis and design of transistor circuits. Network theorems and equivalent circuits are used extensively in evaluating total circuit performance. Device peculiarities and limitations pertinent to reliable operations are considered. H.Y.Z. and T, parameters are employed as well as signal-flow graphs.
Prerequisite: ELN 105.

ELN 214 Wave Shaping and Pulse Circuits *2 2 or 3 3*

Broadband amplifiers, magnetic amplifiers, multivibrators, wave shaping techniques, chopper amplifiers, clipper and clamper circuits.
Prerequisites: ELN 105, MAT 103.

ELN 215 Wave Shaping and Pulse Circuits *2 2 or 3 3*

Pulse techniques, diode switches, gates, step-counters, restorers and other specific circuits which function as switches.
Prerequisite: ELN 214.

ELN 220 Electronic Systems *5 4 or 6 7*

A block diagram course investigating numerous electronic systems. Modules, or blocks of various circuits already studied are arranged in various manners to produce complex systems. Systems will be explained and reduced to functions and then to block diagrams. AM, FM, and Single Sideband transmitters and receivers, multiplexing, TV transmitters and receivers, pulse-modulated

systems, computers, telemetry, navigational systems, sonar and radar will be considered.
Corequisite: ELN 215.

ELN 227 UHF and Microwave Systems	*5*	*4*	*7*

A study of UHF and VHF components, circuits, and measurement techniques. The use of distributed constant elements, waveguides and coaxial cables, microwave links, high frequency oscillators, magnetrons, klystrons, traveling wave tubes. An introduction to the use of the Smith Chart.
Prerequisite: ELN 225.

ELN 230 Television Systems	*4*	*6*	*7*

A study of the principles of television including the television system, camera tubes, scanning and synchronization, composite video signal, receiver circuits, transmitting equipment, color television, and closed-loop systems.
Corequisite: ELN 214.

ELN 240 Digital Computers	*3*	*2*	*4*

An exploration into the methodology of counting and computing. Various computer techniques will be investigated including: non-sinusoidal waveforms, binary and decade counters, industrial counters, readout devices, logic circuits, arithmetic circuits, storage devices, input-output devices, computer control, analog and digital converters.
Prerequisite: ELN 214, MAT 230.

ELN 245 Electronic Design Project	*0*	*4*	*2*

Students are required to design and construct a project approved by the instructor. Includes selection of project, design, construction, and testing of completed project. Projects may include: AM or FM transmitters or receivers, amplifiers, test equipment, control devices, simple counters, lasers, masers, etc.
Prerequisite: ELN 205.

ELN 1102 Applied Electronics	*3*	*3*	*4*

A study of the electrical characteristics of vacuum tubes and transistors. Practical applications of vacuum tubes and transistors to basic audio amplifiers, detectors, modulators and oscillators. Basic applications of each type device to the three configurations of a three terminal two port system will be included.

ENGLISH (ENG)

ENG 101 Composition I	*3*	*0*	*3*

Designed to develop skill in translating first hand experience into written communication. To achieve this skill, the student is given practice in the use of such tools as flexible and accurate word selection and unified, coherent paragraph and essay construction. Principles of grammar will be covered as student needs demand.
Prerequisite: Students are entered on the basis of English placement test scores.

ENG 101S Grammar	*3*	*0*	*3*

Designed to aid the student in the improvement of self-expression in grammar. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation, and spelling. Intended to stimulate students in applying the basic principles of English grammar in their day-to-day situations in industry and social life.
Prerequisite: None

Eng 102 Composition II	*3*	*0*	*3*

Emphasis is placed on writing skills required for the construction of a research paper. Attention is given to the elements of analysis and criticism.
Prerequisite: Eng. 101.

ENG 103 Report Writing 2 2 3

The fundamentals of English are utilized as a background for the organization and techniques of modern report writing. The course will include lectures on major types of reports, independent study and investigation supervised by a department representative and the ENG 103 instructor, and, after a review of the report(s) by a department representative, an oral presentation and interaction-evaluation by students and instructors. In addition, a review of some major types of business correspondence will be made.
Prerequisite: ENG 102.

ENG 204 Oral Communication 3 0 3

A study of basic concepts and principles of oral communications to enable the student to communicate with others. Emphasis is placed on the speaker's attitude, improving diction, voice, and the application of particular techniques of theory to correct speaking habits and to produce effective oral presentation. Attention is given to a variety of individual and group communication experiences.
Prerequisite: ENG 101

ENG 206 Business Communication 3 0 3

Develop skills in techniques in writing business communications including business reports, summaries of business conferences, letters involving credit, collections, adjustments, complaints, orders, acknowledgements, remittances, and inquiry.
Prerequisite: ENG 102.

ENG 207 Literature in the Early Childhood Program 3 0 3

Study of literature for young children with emphasis on criteria for evaluating the literary value of children's books. Extensive reading and development of a topical file provide resources for selection of appropriate materials to use in field practice, to develop skill in oral reading and in story-telling.

ENG 208 Reading Enrichment 3 0 3

This course is designed to guide the student in a better understanding and a greater appreciation of our literary heritage.

In general, selected poetry, short stories, plays, and the novel will be studied.

Emphasis will be given to some of the influential and outstanding writers and their contributions.
Prerequisites: None.

ENG 210 Advanced Writing 3 0 3

This course is designed for students who show potential and are interested in further pursuing writing skills.

Specialized techniques other than those used in general composition will be used with special emphasis given to fiction.

Other categories of writing will be covered according to student interest.
Prerequisite: ENG 102, permission of the instructor.

ENG 212 Journalism I 2 2 3

A course offering practical experience in newspaper production in connection with the publication of the school newspaper and other publications. Interviewing, reporting, and editing will be covered with some emphasis being given to layout procedures. Students interested in photography will have an opportunity to utilize this media.
Prerequisite: ENG 102.

ENG 214 Copywriting I 3 0 3

A study of creative copywriting for advertising and other material. The theory, practice and techniques used in originating copy for various media directed to selected audiences. Emphasis is placed on originality of ideas, interaction-evaluation by students and instructors, and reviews of existing copy for media.

ENG 216 Copywriting II 3 0 3

Continuation of copywriting I with emphasis placed on the more complex problems of planning and producing copy for complete campaigns directed to selected audiences.

ENG 1101 Reading Improvement 1 2 2

This course is designed to improve the student's reading ability. Special emphasis is given to vocabulary, study habits, comprehension, and other techniques.

ENG 1102 Communication Skills 3 0 3

Designed to promote effective communication through correct language usage in speaking and writing.
Prerequisite: ENG 1101.

ENG 1103 Report Writing 3 0 3

Fundamentals of correct language usage applied to report writing. Emphasis is on principles of report construction and application to various report forms.
Prerequisite: ENG 1102.

ENG 1105 Written Communications 3 0 3

Develops skills and techniques of writing communications including memos, committee reports, minutes of meetings, letters involving credit, collections, adjustments, complaints, recall, orders, acknowledgements, remittances, inquiry, patient discontinuing treatment, patient beginning treatment, concerning broken appointment, confirmation and goodwill (thank you, congratulatory, sympathy). The student will also develop skill in compiling, composing and submitting articles for publication in professional papers and journals.
Prerequisite: ENG 1102.

ENG 1115 Technical Communication 3 0 3

A basic course in report writing, speaking, and listening. A thorough study of industrial requirements for technical writing.
Prerequisite: None.

FIRE SCIENCE (FIP)

FIP 101 Introduction to Fire Protection Hazards 3 0 3

History and development of fire service, safety and security movements. The role of the fire service, protection and safety personnel. Ancillary organizations. Identification of general fire hazards and their causes and the application of fire protection principles to them.
Prerequisite: None.

FIP 102 Municipal Fire Protection 3 0 3

Fire department organization, personnel management, and the department's relationship with other city departments. Evaluation of public fire protection needs, financial factors, records and reports, equipment procurement policies, apparatus, tools, training needs and programs, maintenance needs and facilities, and other equipment necessary for modern fire protection.
Prerequisite: FIP 101.

FIP 103 Construction Codes and Material Rating 2 2 3

A thorough study of building codes applicable to fire prevention, and principles and practices used in various types of building construction. Fire resistance tests and ratings of building materials.
Prerequisite: FIP 101.

FIP 105 Applied Electricity for Fire Protection 3 2 4

A thorough study of methods and means of utilizing electricity to provide power. The installation and maintenance of electric circuit and machinery.
Prerequisite: None.

FIP 115 Fire Prevention Programs 3 0 3

Principles and application of fire prevention related to the community and industrial plants. The development and maintenance of fire prevention programs, educational programs, and inspection programs. Specific applications of related disciplines to fire prevention problems.
Prerequisite: None.

FIP 120 Municipal Finance 5 0 5

Municipal finance based on sound government principles and practice. A study of budget items, preparation of budget, justifying budgets, financial statements, cost accounting and record systems, taxation and audits.
Prerequisite: None.

FIP 135 Training Programs and Methods of Instruction 3 0 3

Purposes of fire service drills and training programs. The development and operation of the departments' training programs. Facilities and equipment necessary for modern training. Selecting and training the instructional staff. Suitable methods of instruction.
Prerequisite: FIP 115.

FIP 201 Fire Detection and Investigation 3 0 3

Determination of cause of accidental and incendiary fire, fire losses and loss of records, points of origin, location and preservation of physical evidence, and scientific aid to investigation. Courtroom procedure in presenting evidence. Motives and methods for fire setting and investigative methods are covered.
Prerequisite: None.

FIP 205 Industrial Hazards 3 2 4

A study of hazardous processes in industries such as petroleum, furniture, chemical, tobacco, metal, and textile, and the protection and precautions needed for personnel and property safety. Hazards that are related to heating plants, electrical systems, and storage in all industries.
Prerequisite: FIP 101.

FIP 208 Municipal Public Relations 3 0 3

A general survey of municipal public relations and their effect on the government process. Principles of public relations such as planning, staffing, controlling and directing information to the general public is studied. Emphasis is placed upon personal responsibilities, means of communications, policies and organization of an effective public relations program.
Prerequisite: None.

FIP 211 Grading of Fire Defenses 3 0 3

Insurance grading schedules and their principles of application. Methods of analyzing fire hazards and the effects of fire hazards on fire insurance rates. A study of the National Board Grading Schedule is made in detail with other schedules covered briefly.
Prerequisite: Consent of advisor.

FIP 216 Chemical & Radiation Hazards 3 2 4

Intensive study and analysis of the special hazards encountered in the chemical and petroleum industries. Radiation hazards, effects of radiation on humans, exposure control,radiological instruments, operational and decontamination

procedures, common uses of radioactive materials, transportation, storage, application of special inspection procedures.
Prerequisite: FIP 218, FIP 101.

FIP 218 Chemistry of Hazardous Materials 3 2 4

Theories of combustion and extinguishment, including the analysis of flammable materials and the nature of extinguishing agents. The properties of matter affecting fire behavior. The application of the laws and principles of chemistry and physics to the use, storage, and disposal of flammable liquids, solids, gases and dusts.
Prerequisite: CHM 101.

FIP 220 Fire Fighting Strategy 3 2 3

The aspects of tactics and strategy in extinguishing fires. Pre-fire plans, mutual aid problems, techniques of using available equipment and manpower, conflagrations, techniques of predicting fires by fuel analysis. Emphasis will be on developing thinking skill in relation to crises.
Prerequisite: FIP 102.

FIP 225 Fire Protection Law 3 0 3

A study of law in relation to fire protection. Torts, Terms and Contracts studied by case method. Liability of fire protection personnel when making inspections, recommendations, fighting fires, and other tasks. Pertinent laws, ordinances, and codes and the responsibilities and powers of the individual or organization concerning inforcement.
Prerequisite: FIP 102.

FIP 226 Industrial Safety 3 0 3

A fundamental study of industrial safety records, development of safeguards, accident costs, and causes, job safety analysis, plants designed for safety, and safety maintenance. Methods of eliminating hazards including color coding, guards, and personal protective equipment. A study of the precautions and safeguards essential to protecting lives during fires in various types of occupancies. Exit code requirements, personnel protective devices, and practical safeguards will be studied. Review of case histories of fires and explosions which have resulted in loss of life to determine how these types of tragedies can be prevented.
Prerequisite: FIP 101.

FIP 230 Hydraulics and Water Distributive Systems 3 2 4

Mechanics of the flow of fluids through fire hose, nozzles, and appliances, pumps, standpipes, watermains, and other devices. Design, testing and use of nozzles and appliances, pumps, and water distribution systems. Measurement of fluid flow and methods of determining quantities of water available from a distribution system. Practical applications of principles.
Prerequisites: MAT 101, PHY 101.

FIP 231 Sprinkler and Standpipe Systems 3 2 4

Types of sprinkler and standpipe systems, system devices and their operation, advantages of sprinkler systems, codes governing installation, water supply requirements testing, inspection, and maintenance.
Prerequisite: FIP 230.

FIP 235 Inspection Principles and Practices 3 4 5

A study of the fundamentals of fire inspections including standards, techniques of evaluation of hazards as to degree of the hazard and practical recommendations. Reports including maps and sketches of each building inspected. On-the-site inspections of buildings to locate hazards and to recommend safe practices and improvements.
Prerequisite: FIP 103, DFT 118.

FIP 240 Multiple Line Insurance & Rating Schedules 4 0 4

A study of multiple line insurance, types of policies, selection, rate making, settlement of claims, handling of risks, and self-insurance. Types of rating schedules including the analytic and mercantile schedule. Methods of determining fire rating classification.
Prerequisite: FIP 211.

FIP 245 Automatic Alarm and Extinguishing Systems 3 2 4

A study of the types of fixed extinguishing systems, standard and special fire alarm and fire detection systems; their operation, installation requirements, testing, inspection, and maintenance.
Prerequisite: FIP 105.

INDUSTRIAL SCIENCES (ISC)

ISC 102 Industrial Safety 3 0 3

Problems of accidents and fire in industry. Management and supervisory responsibility for fire and accident prevention. Additional topics cover accident reports and the supervisor; good housekeeping and fire prevention; machine guarding and personnel protective equipment; state industrial accident code and fire regulations; the first aid department and the line of supervisory responsibility; job instruction and safety instruction; company rules and enforcement; use of safety committees; insurance carrier and the Insurance Rating Bureau; and advertising and promoting a good safety and fire prevention program.
Prerequisite: None.

ISC 110 Yarn Manufacturing, Dyeing & Finishing I 1 2 3

ISC 111 Yarn Manufacturing, Dyeing & Finishing II 1 2 3

Fibers: Natural and man made, physical and chemical identification. Yarn manufacturing: Staple, blending, carding, combing, spinning, coning. Fabric construction: Wovens, knits, stretch wovens and non-wovens.
Fabric types: Home furnishing, apparel and industrial.

ISC 115 Intermediate Dyeing & Finishing Techniques I 1 2 3

ISC 116 Intermediate Dyeing & Finishing Techniques II 1 2 3

Fiber identification by: Instrumentation and special dyes. Dyeing: Yarns and fabrics of 100% of one yarn to blends of two and three fibers, dye selection for end use and cost, color matching, reworks. Finishing: Types of finishes and how to select proper one to meet specifications and cost. Finish using durable press, non-durable and durable water repellents, soil release, oil repellent, flame retardant, crease resistance and dry cleanable finishes. How to improve: Stiffness of hand, pilling, crocking, shrinkage, differential wear, sewability and mark-off.

ISC 120 Principles of Industrial Management 3 2 4

The basic managerial decisions; organizational structure including plant location, building requirements, and internal factory organization; problems of factory operation and control, planning, scheduling, routing factory production, stores control, labor control. purchasing, cost control. Plant problems are utilized as lab experiments.
Prerequisite: None.

ISC 130 Instruments for Fiber & Fabric Processing Efficiency I 1 2 3

ISC 131 Instruments for Fiber & Fabric Processing Efficiency II 1 2 3

Current understanding of textile equipment; testing, recording, controllers, etc. How they are best used in conjunction with other possible correlations or data using new or relationship of current equipment.

ISC 135 Environmental Instrumentation to Meet OSHA Industrial Standards I 1 2 3

Current equipment such as: (1) Personal Samplers (dust particulates such as cotton, asbestos, silica, etc). (2) Gas Samplers for toxic gases (CO, SO_2, Halocarbons, dye carriers. (3) Microscopic and other related optical instruments (particulate counters). (4) Impengers and gas-air absorption apparatus (gases-aerosols-particulates). (5) Wet analysis (water pollution effluents, dye waste-COD, BOD etc. evaluations.

ISC 136 Environmental Instrumentation to Meet OSHA Industrial Standards II 1 2 3

In conjunction with usage of above equipment. Special topics and study of practical plant problems. Students will evaluate above areas as relates to new and improved techniques.

ISC 201 Industrial Organization and Management 3 0 3

Organizational structure for industrial management; operational and financial activities, including accounting budgeting, banking, credit and industrial risk, forecasting of markets, selection and layout of physical facilities; selection, training and supervision of personnel as found in typical industrial organizations.
Prerequisite: None

ISC 202 Quality Control 3 2 4

Principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance.
Prerequisite: None.

ISC 203 Motion Study 3 2 4

Types of methods studies and their applications. Process charts, analysis sheets, time study, work simplification, skill and effort rating.
Prerequisite: None.

ISC 204 Value Analysis 3 0 3

The modern concept in the control of manufacturing production. This course will provide the students an opportunity to study a production system with the specific purpose of identifying unnecessary costs. The objective of the concepts and techniques of value analysis is to make possible a degree of effectiveness in identifying and removing unnecessary cost by the use of sound decisions through a common sense approach.
Prerequisite: None.

ISC 207 Foremanship Supervision 3 2 4

The foreman's responsibility for planning, organizing, directing, controlling, and coordinating supervisory activities. It teaches the supervisor the basic functions of an organization and his responsibility in carrying out the objectives in accordance with the organizations's plan. Included in the course are such topics as establishing lines of authority, functions of departments of units, duties and responsibilities, policies and procedures, and rules and regulations.
Prerequisite: BUS 272.

ISC 209 Plant Layout 3 2 4

A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment. Effective management of men, money and materials in a manufacturing operation.
Prerequisite: Consent of advisor.

ISC 210 Job Analysis and Evaluation *3 2 4*

This study is based on product studies as well as personnel and wage program. The course utilizes the study of product design, value analysis, materials and processes as an intricate part of productive procedures.
Prerequisite: None.

ISC 211 Work Measurement *3 2 4*

Principles of work simplification including administration of job methods improvement, motion study fundamentals and time study techniques. Use of flow and process charts; multiple activity charts, operation charts, flow diagrams and methods evaluation.
Prerequisite: ISC 210

ISC 220 Management Problems *3 0 3*

A study of personnel and production problems from the standpoint of the executive. Includes selection and development of products, control problems and techniques, development of standards, employee-employer relations, developing the executive staff. Cost studies are utilized.
Prerequisite: ISC 120.

ISC 231 Manufacturing Cycles *5 0 5*

Purchasing and distribution costs; consumption patterns; channels of distribution; marketing of consumer goods; shopping, specialty, agricultural and industrial goods; service marketing; functional middlement; speculation and hedging; wholesaling; shipping and warehousing; exporting and trade movements; standardization and grading; pricing, government regulation of competition; sales promotional activities; merchandising practices.
Prerequisite: None.

ISC 240 Applied Problems in Industrial Engineering *3 6 5*

A practical problem will be given the student. Where possible, this problem will be from an actual industrial situation. The student will apply his knowledge from previous courses to solve the problem.

MATHEMATICS (MAT)

MAT 101 Technical Mathematics *5 0 5*

The complex number system is developed as a super-set generated by fundamental operations on the natural number set. Fundamental algebraic operations, linear equations, rectangular coordinates, analytic geometry of a line systems of linear equations, quadratic equations and scientific notation are introduced. Topics are taught in a manner which allows the student to use them in practical application.
Prerequisite: Satisfactory evidence that admission requirements have been met.

MAT 102 Technical Mathematics *5 0 5*

MAT 102 is a continuation of MAT 101. Advanced algebraic and trigonometric topics are studied in depth. Topics included are: quadratic and higher degree equations, roots, synthetic substitution, remainder and factor theorems, logarithmic and exponential functions and solutions of equations containing them, complex numbers, solution of oblique triangles, the general sine function, and the graphs of trigonometric functions.
Prerequisite: MAT 101.

MAT 103 Technical Mathematics *5 0 5*

The fundamental concepts of analytic geometry and differential and integral calculus are introduced. Topics included are the conic sections and the general quadratic in two variables, limits, derivatives, differentials, and indefinite and

definite integrals of algebraic functions.
Prerequisite: MAT 102.

MAT 110 Business Mathematics 5 0 5

This course stresses the fundamental operations and their application to business problems. Topics covered include payrolls, price marking, interest and discount, commission, taxes, and pertinent uses of mathematics in the field of business.
Prerequisite: None.

MAT 112 Business Mathematics for Data Processing 5 0 5

This is a course in Business Mathematics especially adapted to meet the needs of those students who have chosen the Business Data Processing option. It includes a study of the basic arithmetic methods of business calculations, record keeping, and problem solving. The mathematics necessary for a study of accounting is covered.
Prerequisite: MAT 101.

MAT 131 Elementary Technical Mathematics 3 4 5

Included topics are Practical Number Systems, The Notions of Variables and Functions, Basic Algebraic Operations, Laws of Exponents and Radicals, and Equations and Formulas. Topics are taught in a manner which promotes their use in practical application.
Prerequisite: MAT 1102 or equivalent.

MAT 132 Elementary Technical Mathematics II 3 4 5

A continuation of MAT 131 which includes the topics Scientific Notation and Slide Rule Computations, Linear Equations, Proportion and Variation, Systems of Linear Equations, and Right Triangle Trigonometry.
Prerequisite: MAT 131.

MAT 201 Technical Mathematics 5 0 5

A continuation of MAT 103. More advanced concepts of differentiation and integration are considered. Included are graphs and derivatives of the trigonometric functions, exponential and logarithmic differentiation and integration, advanced integration techniques, polar equations, and parametric equations.
Prerequisite: MAT 103.

MAT 208 Calculus and Laplace Transforms for Electronics 5 0 5

An investigation of the methods of calculus which are of the most direct use in the study of electronic circuits. Introduction to selected topics from differential equations and Laplace transforms and applications of these methods to the solution of electronic circuit problems.
Prerequisite: ELN 214.

MAT 214 Statistics 5 0 5

The theory of statistics and its application in modern business. Kinds of regularity that exist among random fluctuations. Experience in associating and using mathematical models to interpret physical phenomena and predicting the outcomes of experiments related to practical business problems.
Prerequisite: MAT 101.

MAT 219 Differential Equations 5 0 5

Methods of solving first-order and simple higher order ordinary differential equations and linear differential equations with constant coefficients; solution of differential equations by series; and numerical solutions of differential equations.
Prerequisite: MAT 201.

MAT 230 Boolean Algebra with Computer Applications 4 2 5

This course covers the language, laws, theorems, and equations of Boolean

Algebra which, along with truth tables, Karnaugh maps, and logic diagrams will be used to design logic and switching circuits. Arithmetic in radices other than radix ten will be studied so that computer arithmetic problems may be understood. Examples of computer circuitry that may be studied are: encoding and decoding matrices, full adders, detect networks, ones and nines complement circuits, and others.
Prerequisite: MAT 101.

MAT 1101 Fundamentals of Mathematics 5 0 5

Practical number theory. Analysis of basic operations: addition, subtraction, multiplication and division. Fractions, decimals, powers and roots, percentages, ratio and proportion. Plane and solid geometric figures used in industry; measurement of surfaces and volumes. Introduction to algebra used in trades. Practice in depth.
Prerequisite: None.

MAT 1102 Algebra 5 0 5

Basic concepts and operations of algebra: historical background of our base-10 number system; algebraic operations: addition, subtraction, multiplication and division; fractions, letter representation, grouping, factoring, ratio and proportions, variation; graphical and algebraic solution of first degree equations; solution of simultaneous equations by: addition and subtraction, substitution, graphing, exponents, logarithms, tables and interpolations.
Prerequisite: None.

MAT 1103 Geometry 3 0 3

Fundamental properties and definitions; plane and solid geometric figures, selected general theorems, geometric construction of lines, angles and plane figures. Dihedral angles, areas of plane figures, volumes of solids. Geometric principles are applied to shop operations.
Prerequisite: None.

MAT 1104 Trigonometry 3 0 3

Trigonometric ratios; solving problems with right angles, using tables, and interpolating; solution of oblique triangles using law of sines and law of cosines; graphs of the trigonometric functions; inverse functions, trigonometric equations. All topics are applied to practical problems.
Prerequisite: MAT 1103.

MAT 1123 Machinist Mathematics 3 0 3

Introduces gear ratio, lead screw and indexing problems with emphasis on application to the machine shop. Practical applications and problems furnish the trainee with experience in geometric propositions and trigonometric relations to shop problems; concludes with an introduction to compound angle problems.
Prerequisite: MAT 1104.

MAT 1150 Mathematics for Nursing 2 0 2

Basic concepts and operations involving addition, subtraction, multiplication and division of integers, fractions, decimals and percents. Metric measurements and conversions. Basic concepts of liquid and solid measurements using British and Metric systems.
Prerequisite: None.

MECHANICAL (MEC)

MEC 101 Machine Processes 0 6 2

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.

MEC 102 Machine Processes *0 6 2*

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice.Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed.
Prerequisite: MEC 101.

MEC 103 Machine Shop Theory and Practice *1 6 3*

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing, and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic exercises will be given on the turret lathe and on the tool and cutter grinder.
Prerequisite: MEC 102.

MEC 104 Machine Shop Theory and Practice *1 6 3*

A continuation of MEC 103

MEC 105 Machine Shop Theory & Practice *1 6 3*

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry.
Prerequisite: MEC 104

MEC 106 Machine Shop Theory and Practice *1 6 3*

A continuation of MEC 105

MEC III Manufacturing Processes *3 9 6*

A survey of manufacturing processes, machines, tools, and devices with regard to their capabilities, capacities, tolerances, finishes, etc. Product design, materials utilized, engineering nomenclature, and common terminology will be discussed.
Prerequisite: None.

MEC 112 Manufacturing Processes *2 5 4*

Process planning of operation sequences for efficient production, tool planning, and estimating. An introduction to metallurgy as well as characteristics of non-metalic materials.
Prerequisite: MEC III.

MEC 115 Treatment of Ferrous Metals *2 3 3*

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, cast iron will be topics for study.
Prerequisite: None.

MEC 116 Engineering Materials *3 0 3*

Study and testing of the properties of ferrous and non-ferrous metals and

plastics, load and strain measurements, behavior of materials under load, qualities other than strength and control of the properties of the materials.
Prerequisite: PHY 102.

MEC 117 Treatment of Non-Ferrous Metals 2 3 3

Continuation of the study of physical metallurgy. The non-ferrous metals: bearing metals, (brass, bronze, lead), light metals (aluminum and magnesium), and copper and its alloys are studied. Power metallurgy, titanium, zirconium, indium and vanadium are included in this course.
Prerequisite: MEC 115.

MEC 126 Heat Treating Practice 1 3° 2

A working knowledge of the methods of heat treating of small parts, springs, punches, chisels, etc. Trainees will be given the opportunity to acquaint themselves with the equipment and work in both ferrous and non-ferrous metals.
Prerequisite: None.

*MEC 201 & 202 Precision Machining I & II 0 6 2

Advanced operations in the use of machine shop equipment. Much emphasis will be placed on machining close tolerances.
Prerequisite: MEC 1030,1040,1050, & 1060.

*MEC 203 & 204 Jig, Fixture & Die Making I & II 0 6 2

Develop understanding of principles and work of jigs and fixtures. Sketching, drawing and fabrication of simple jigs, and fixtures as projects. Basic principles of die making will be studied and applied as they relate to projects.
Prerequisite: MEC 201 & 202.

MEC 205 Strength of Materials 3 3 4

Study of principles and analysis of stresses which occur within machine and structure elements subjected to various typed of loads such as static, impact, varying and dynamic. Analyses of these stresses are made as applied to thin-walled cylinder and spheres, riveted, and welded joints, beams, columns, and machine components.
Prerequisite: PHY 106 or Equivalent.

MEC 206 Cutter Grinding 2 6 4

Cutter Grinding is designed to familiarize the student with grinding machines, procedures, and applications as they apply to tool maintenance. Stock removal, and cutting speeds and angles will be studied.
Prerequisite: None.

MEC 207 Automatic & Semi-Automatic Machinery 3 3 4

A study of the use and application of automatic and semi-automatic machinery. The theory and methods of modern tape and card-controlled machine tools will be included.
Prerequisite: MEC 1030,1040,1050 & 1060.

*MEC 208 & 209 Model Making I & II 0 6 2

A course designed to familiarize students with procedures and techniques necessary in model making. Design and design evaluation will be applied to three-dimensional projects.
Prerequisite: MEC 203-204.

MEC 210 Physical Metallurgy 3 3° 4

Introductory course in metallurgy, a basic study of the properties of metals and alloys. Analysis of the structure of metals and alloys, atomic structure, nuclear structure, and nuclear reactions. Solid (crystalline) strucutres, methods of

designing crystal planes, liquid and vapor phases, phase diagrams, and alloy systems.
Prerequisites: PHY 101, CHM 111.

MEC 211 Physical Metallurgy 2 3 3

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bonding and homogenization, recrystallization and grain growth, age hardening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations.
Prerequisite: MEC 210.

MEC 213 Production Planning 3 3 4

Day-to-day plant direction: forecasting, product planning and control, scheduling, dispatching, routing, and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. Drafting room layouts for planning and control.
Prerequisite: DFT 1100.

MEC 217 Engineering Materials and Process 3 3 4

An introductory study of the common materials used in engineering, such as woods, metals, concrete, plastics, etc., and the related physical testing to determine their properties and strengths. Emphasis is placed upon problem-solving and engineering application.
Prerequisites: PHY 102, MEC 102.

**MEC 218 & 219 Design & Manufacturing I & II* 0 6 2

Design and manufacturing will develop the creative ability of the student in designing and building tools and equipment for use in his career in industry. To combine the math, drafting and machining ability acquired in the first seven quarters, culminating in a practical tool.
Prerequisites: MEC 203,204,208 & 209.

**MEC 222 Internship III* 2 20 4

The cooperative student's lab correlated in conjunction with lecture in MEC 201.

MEC 223 Internship IV 2 20 4

Cooperative student's lab correlated with lectures provided in MEC 207.

MEC 224 Internship V 2 20 4

Cooperative student's lab for MEC 203.

MEC 225 Internship VI 2 20 4

Cooperative student's lab for MEC 204.

MEC 235 Hydraulics and Pneumatics 3 3 4

The basic theories of hydraulic and pneumatic systems. Combinations of systems in various circuits. Basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs.
Prerequisite: PHY 102.

MEC 237 Control Systems 2 4 4

Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance, accuracy, applications and their utilization in industrial processes.
Prerequisite: PHY 102.

MEC 1010 Machine Processes 2 6 4

An introductory course designed to acquaint the student with basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring, and reaming.

MEC 1020 Machine Processes 2 6 4

Advanced operations on lathe, drilling, boring and reaming machines. Milling machine theory and practice. Thorough study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed.
Prerequisite: MEC 1010.

**MEC 1030 & 1040 Machine shop Theory and Practice I and II 0 6 2*

Advanced work on the engine lathe, turning, boring and threading machines, grinders, milling machine and shaper. Introduction to basic indexing and terminology with additional processes on calculating, cutting and measuring of spur, helical, and worm gears and wheels. The trainee will use precision tools and measuring instruments such as vernier height gages, protractors, comparators, etc. Basic Exercises will be given in the turret lathe and on the tool and cutter grinder.
Prerequisite: MEC 1010 & 1020.

**MEC 1050 & 1060 Machine Shop Theory & Practice III & IV 0 6 3*

Development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Additional processes on the turret lathe, tool and cutter grinder, cylindrical and surface grinder, advanced milling machine operations, etc. Special procedures and operations, processes and equipment, observing safety procedures faithfully and establishing of good work habits and attitudes acceptable to the industry.
Prerequisite: MEC 1030 & 1040.

MEC 1110 Manufacturing Processes 2 6 4

A survey of manufacturing processes, machines, tools, and devices with regard to their capabilities, capacities, tolerances, finishes, etc. Product design, materials utilized, engineering nomenclature, and common terminology will be discussed.
Prerequisite: None.

MEC 1113 Shop Process 2 3 3

Study of practices used in metalworking shops; introduction to how materials can be utilized, and to the processes of shaping, forming and fabricating of metals. Demonstration of the metalworking lathes, grinders, drills, milling machines, shapers, planers, saws, broachers, gear cutting machines and finishing machines. A study of the capabilities of these machines.
Prerequisite: None.

MEC 1114 Shop Processes 2 3 3

Comparison of the unit-production and mass-production systems. Casting, forging and allied processes, welding and sheet metal working processes are demonstrated and discussed. Mass-production methods are studied in relationship to precision dimensional control.
Prerequisite: MEC 1113.

MEC 1115 Treatment of Ferrous Metals 2 3 3

Investigates the properties of ferrous metals and tests to determine their uses. Instructions will include some chemical metallurgy to provide a background

for the understanding of the physical changes and causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloy of special steel, classification of steels, cast iron will be topics for study.
Prerequisite: None.

MEC 1116 Treatment of Non-Ferrous Metals *2 3 3*

Continuation of the study of physical metallurgy. The non-ferrous metals: bearing metals (brass, bronze, lead), light metals (aluminum and magnesium), and copper and its alloys are studied. Power metallurgy, titanium, zirconium, indium and vanadium are included in this course.
Prerequisite: MEC 1115.

MEC 1120 Manufacturing Processes *2 6 4*

Process planning of operation sequences for efficient production, tool planning, and estimating. An introduction to metallurgy as well as characteristics of non-metallic materials.
Prerequisite: MEC 1110.

MEC 1135 Hydraulics and Pneumatics *2 3 3*

This course is arranged to give the student a general knowledge of the basic components of hydraulic systems, as well as a general understanding of the basic laws and formulas used in simple hydraulic calculations. Course covers such topics as the use of standard hydraulic symbols, pumps, control valves, control assemblies, actuators and basic maintenance procedures.
Prerequisite: None.

MEC 1154 Gages and Templates *1 5° 3*

A study designed to familiarize the student with methods and procedures of gauging using specialized gages and measuring instruments in template manufacture.
Prerequisite: MEC 201, MEC 202.

***MEC 1220 Internship I* *2 20 4*

This is the cooperative student's lab which is correlated with lectures in MEC 103 in which the coop student receives actual on-the-job work experience meeting quality control and production standards. The correlation will be by means of a training plan agreed upon by the employer, the school and the student. The training plan contains stated objectives of the lecture and lab as to points covered and experiences expected in the industrial setting.

***MEC 1230 Internship II* *2 20 4*

Cooperative student lab correlated with lecture from MEC 104.

MEC 1505 Mechanisms *2 3° 3*

Mathematical and drafting room solutions of problems involving [illegible] principles of machine elements. Study of motions of linkage, velocities and acceleration of points within a link mechanism; layout methods for designing cams, belts, pulleys, gears, and gear trains.

MEC 1515 Manufacturing Processing *4 0 4*

A thorough study of the planning of the processes and methods of manufacturing. Assembly line techniques, automation, materials, and efficiency operations will be stressed.
Prerequisite: None.

MEC 1516 Strength of Materials *2 2 3*

Strength of Materials is designed to give the student an opportunity to use

basic testing equipment and acquire a working relationship, basic stresses and strength of materials.
Prerequisite: MAT 1126.

*Non-Co-op student
**Co-op student
# Accelerated program

PHYSICS (PHY)

PHY 101 Properties of Matter *3 2 4*

A course in physics fundamentals. Basic divisions are systems of units, liquids at rest and in motion, elasticity of solids, liquids, and gases, heat and temperature, thermal expansion, change of phase and heat transfer. Laboratory experiments and specialized problems dealing with these topics are part of this course.
Prerequisite: MAT 101.

PHY 102 Work, Energy and Power *3 2 4*

A course concentrating on work, energy and power. Basic divisions are vector quantities, systems of forces, torque and equilibrium, linear motion, force and motion, work and energy momentum, uniform circular motion and gravitation, and rotational motion. Laboratory experiments and specialized problems dealing with these topics are part of this course.
Prerequisites: MAT 102, PHY 101.

PHY 103 Electricity *3 2 4*

Basic theories of electricity, types of electricity, methods of production, and transmission and transforming of electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction voltage, amperage, resistance, horsepower, wattage, and transformers are major parts of the course.
Prerequisites: MAT 102, PHY 102.

PHY 104 Light and Sound *3 2 4*

A survey of the concepts involving wave motion leads to a study of sound, its generation, transmission and detection. The principles of wave motion also serves as an introduction to a study of light, illumination and the principles involved in optical instruments. Application is stressed throughout.
Prerequisites: MAT 102, PHY 102.

PHY 105 Modern Physics *3 2 4*

Modern Physics presents a survey of experiment and theory leading to the presently accepted model of the atom and its nucleus. The subject matter includes a historical study of laboratory and thought experiments and hypotheses leading to the Bohr model of the atom as well as subsequent modifications to the Bohr model. The concepts involved with relativity, and Lorentz transformation and wave mechanics are considered. Natural and artificially induced radiation is related to nuclear stability. X-ray generation and use in determining crystal structure is discussed. The mass-energy relationship is explored from the standpoint of mass defect. Fission and fusion chain reactions with their associated energy release are also considered. Dosage measurement in a radiation environment and present applications of radiation and nuclear energy are stressed.
Prerequisite: PHY 104.

PHY 106 Applied Mechanics *5 0 5*

Concepts and principles of statics and dynamics. Parallel concurrent and noncurrent force systems in coplanar and noncoplanar situation. Concepts of

centroids and center of gravity, moments of inertia, fundamentals of kinetics, and kinematics of velocity and motion.
Prerequisites: MAT 102, PHY 102.

PHY 131 Matter and Energy 3 2 4

A fundamental course with a balance between theory and practice but emphasizing applications. The material to be covered is Structure of Matter; Properties of Solids, Liquids and Gases; Temperature and the Effects of Heat; Heat and Change of State; Heat Transfer; Force and Motion; Work, Energy and Power; Basic Machines; and Power Transmission.
Prerequisite: PHY 1102.

PHY 132 Electricity & Magnetism 3 2 4

A specialized course in electricity and magnetism emphasizing application. The material to be covered is Magnetism and Electrostatics; Basic Electric Circuits; Sources and Effects of Electric Current; Electro-magnetism; Alternating Current; Generators and Motors; and Production and Distribution of Electric Power.
Prerequisite: PHY 131.

PHY 1101 Applied Science 3 2 4

An introduction to physical principles and their application in industry.

Topics in this course include measurement; properties of solids, liquids, and gases; basic electrical principles.
Prerequisite: MAT 1101.

PHY 1102 Applied Science 3 2 4

The second in a series of two courses of applied physical principles. Topics introduced in this course are heat and thermometry, and principles of force, motion, work, energy, and power.
Prerequisite: PHY 1101.

POLITICAL SCIENCE (POL)

POL 201 United States Government 3 0 3

Survey of Government: A study of basic governmental concepts at the national, state, and local levels.
Prerequisite: None.

PRACTICAL NURSING (PNE)

PNE 1001 Fundamentals of Health 2 0 0 2

This course is a study of total health and health habits and their effect on the individual, the family, and the environment in which they live. The study of health resources available to all persons and selected agencies that may be visited for special learning.
Prerequisite: None.

PNE 1002 Basic Sciences 6 4 0 8

This course is designed to give the student an understanding and appreciation of basic science principles and their relationship to practical nursing. The course includes study of the structure and functions of the systems of the body, the basic principles of nutrition, and selected learning of Microbiology as related to the prevention of diseases, promotion of health, and the nurse's responsibilities in protecting the patients and others from illness and/or infections.
Prerequisite: None.

PNE 1003 Fundamentals of Practical Nursing 4 8 0 8

Designed to assist the beginning Practical Nurse student in acquiring knowl-

edge basic to the development of skills needed for safe and effective bedside nursing care.
Prerequisite: None.

PNE 1004 Clinical Experience I 0 0 21 7

Beginning experiences in a general hospital under supervision of clinical instructors with opportunity to apply principles and practice skills learned in the laboratory, and understanding of the students' role on the nursing team.
Corequisites: PSY 1101, PNE 1001,1002,1003.

PNE 1005 Medical-Surgical Nursing I 2 2 0 3

Designed to give the student material basic to the beginning understanding of the nursing care of patients with common problems presented by illness. Processes of illness, diagnostic tests, physiologic reaction to pain, needs of patients with long term illnesses, rehabilitation, pre and post operative needs, and emotional aspects of illnesses.
Prerequisite: PNE 1001,1002,1003, PSY 1101.

PNE 1006 Maternity Nursing 2 2 0 3

Presentation of modern aspects of material on nursing care during antepartum, labor and postpartum periods. Care of the newborn baby and methods of teaching new mothers. Emphasis is to provide better and safer care for the expectant mother and her baby.
Prerequisites: PNE 1001,1002,1003; PSY 1101.

PNE 1007 Nursing of Children 2 2 0 3

Designed to develop understanding of the scope and aims of modern nursing of children, and methods of answering the needs of the hospitalized child and his parents. Nursing care of children with common disorders and advancing to the care of the more seriously ill child. Emphasis will be on the role of the student on the health team.
Prerequisites: PSY 1101, PNE 1001,1002,1003.

PNE 1008 Clinical Experience II 0 0 21 7

Further experience in basic areas of medical, surgical, pediatric and obstetric nursing in rotating groups. Emphasis on observation of signs and symptoms and assuming responsibility in reporting to head nurse.
Prerequisite: PNE 1004.

PNE 1009 Medical-Surgical Nursing II 4 2 0 5

Designed to develop knowledge of common disorders of body systems, the nursing care, socio-psychological implications.
Prerequisite: PNE 1005.

PNE 1010 Introduction to Drug Administration 2 2 0 3

A beginning study of the Metric and apothecaries systems of measurement as they pertain to drug administration, techniques of drug administration, computation of dosages and actions of more commonly used drugs.
Prerequisites: PNE 1004, PNE 1005, MAT 1150.

PNE 1011 Clinical Experience III 0 0 21 7

Continued experience in medical-surgical pediatric and maternity nursing with emphasis on the role as an assistant to the professional nurse in caring for the seriously ill patient in rotating experience.
Prerequisite: PNE 1008.

PNE 1012 Advanced Medical-Surgical Nursing III 4 0 0 4

Continue the study of the nursing needs of the more seriously ill, the aging patient, and an introduction to the nursing care of the emotionally ill.
Prerequisite: PNE 1009.

PNE 1014 Vocational Adjustment 2 2 0 3

Designed to present further nursing ethics, medical-legal aspects of Practical Nursing, a study of the nursing organizations and the study of work opportunities, and the obligations and responsibilities of the Licensed Practical Nurse as a person, a worker, and a citizen.
Prerequisite: Satisfactory completion of PNE up to this point.

PSYCHOLOGY (PSY)

PSY 108 Psychology of Communications 3 0 3

An examination of basic communications psychology. The course gives the student a rudimentary understanding of some of the basic principles of perception, determinants of attention, information theory, memory, and learning. Emphasis is placed on applying these principles to the visual communications field and on showing the student how best to convey information to identified audiences.

PSY 201 General Psychology 3 0 3

An introduction to the science of behavior including the study of heredity, maturation, learning and remembering, perception, motivation, environment and normal/abnormal personality.

PSY 206 Applied Psychology 3 0 3

A survey of psychological thinking on the topics of heredity, environment, maturation, learning, motivation, emotion, perception, and personality (normal and abnormal). Emphasis is placed on the application of knowledge to work and life situations.
Prerequisite: None.

PSY 213 Advanced Psychology 3 0 3

An expansion of the topics surveyed in Applied Psychology, PSY 206.
Prerequisite PSY 206.

PSY 221 Psychology of Color 3 0 3

A study of color, the conscious and subconscious response to combination of colors as applied to visual communications.
Prerequisite: None.

PSY 230 Psychology of the Handicapped 3 0 3

A basic introduction to the psychological characteristics of the severely handicapped. Emphasis is on the effects of retardation, autism, and impairments of visual, speech and hearing on learning abilities and social adjustment of children. Especially designed to fit the needs of counselors, teachers, health care personnel and parents who work with children who have disorders of communication and behavior.

PSY 1101 Human Relations 3 0 3

A study of basic principles of human behavior. The problems of the individual are studied in relation to society, group membership, and relationships with the work situation.
Prerequisite: None.

PSY 1112 Personality Development 3 0 3

Designed to help the student recognize the importance of the physical, intellectual, social, and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

SOCIAL SCIENCES

SSC 201 Social Science 3 0 3

An investigation into the basic concepts of sociology. Topics considered are

sociological methods, the nature and meaning of culture, personality and socialization, role and status, social control, groups and associations, institutions, and the family. Course emphasis is on application of the principles of sociology to the understanding of life and work situations.
Prerequisite: None.

SSC 202 Social Science *3 0 3*

An extension of the student's knowledge into the area of sociology, the course includes considerations of social class, social mobility, social processes, social power, race relations, collective behavior, population, community problems, social change, and social movements. The course emphasizes a non-scientific but in-depth analysis of some of the more complex topics in sociology.
Prerequisite: SSC 201.

SSC 203 Environmental Studies *3 0 3*

A study of environmental problems caused by the impact of man and technology upon the natural resources of the earth. Basic ecology and ecosystems are introduced at the beginning. Various causes of pollution are studied and possible solutions discussed. The social, economic and political impact of environmental problems is stressed.

SSC 204 Families in American Culture *3 0 3*

Study of the family in American culture, changing patterns in family roles, the influence of socio-economic status on family relationships, factors, associated with cultural deprivation, and the effects on children in such families.

SSC 205 American Institutions *3 0 3*

A study of the effect of American social, economic, and political institutions upon the individual as a citizen and as a worker. The course dwells upon current local, national, and global problems viewed in the light of our political and economic heritage.
Prerequisite: None.

SSC 206 The Family: A Cross-Cultural Survey *3 0 3*

Study of the family as a social unit, with primary focus on the influence of family relationships during infancy and childhood. Historical patterns and the evolution of family roles in various types of cultures provide opportunities to analyze and interpret the influence of the culture and the family in relation to the larger society.

SSC 207 The Child and Community Services *3 0 3*

Study of the community agencies concerned with the physical and mental health of children and their families. Analysis of the child needs which can be met through community planning, with identification of local, state, and national resources.

SSC 208 Industrial Sociology *3 0 3*

A study of behavior and performance dictated by the sociology of occupations, professions and work with special attention to human relations in industrial and other work situations.

TRANSPORTATION MAINTENANCE TECHNOLOGY

PME 201 Motor Vehicle Laws and Regulations *3 0 3*

In order to assure a complete knowledge of the latest laws and regulations governing the automobile operation and automotive repair business operation this course will delve deeply into such laws and regulations.

PME 202 Emission Control Systems *2 3 3*

A course designed to give each student a complete and deep knowledge of today's emission control systems including testing and overhaul of all major parts.The proper use of emission level testing equipment will be covered as well as component overhaul procedure.

PME 205 Disc Brakes 0 6 2

In order to be completely up-to-date on the complex braking systems of today the automotive student needs a complete understanding of the latest disc brakes. This course is to give the student time in the lab to experiment and study all phases of disc brakes. With instructor guidance, each student on completion of this course will be able to test and overhaul disc brakes as found on the cars of today.

PME 206 Alternator and Starter Rebuilding 1 3 2

Through class and laboratory experiences, this course gives the student an understanding of design and overhaul procedures on the alternator and starter systems.

*PME 207 Chassis Suspension and Power Systems 4 6 6

An advance course dealing with a comprehensive study of automatic transmissions, power trains, braking and steering systems. Emphasis placed on diagnosing, repair, rebuilding the various components which make up these complex systems.

*PME 209 Foreign Engines 2 6 4

Emphasis in this course will be on basic differences in construction, carburetion, ignition and electrical systems encountered on foreign car engines. Additional emphasis on minor repair, maintenance and diagnosis of these problems.

*PME 210 American Automotive 2 6 4

An advanced course dealing with American manufactured automotive engines in respect to construction, variations in design, principles of operation, fuels, lubricants, and coolants. Live shop work should include valve grinding, boring cylinders, cambearing installation, and rebuilding various components such as starters, generators, and carburetors. Emphasis placed on diagnostic and trouble-shooting procedures using the latest testing equipment.

*PME 211 Foreign Automotive 2 6 4

An advanced course dealing with foreign automotive engines. Emphasis placed on the same objectives as encountered in PME 210.

*PME 212 Rotary and Opposed Piston Engines (Automotive) 2 6 4

An advanced course dealing with rotary and opposed piston engines, their construction, principles of operation, unique ignition and electrical components and other uncommon characteristics.

PME 213 Engine Modification and Advanced Engine Designs 0 6 2

Designed to give the student who has mastered the standard gasoline engine a chance to further his knowledge and technique of specific engine modification for more efficient engine performance consistant with emission control standards.

PME 214 Instruments, Gauges, and Electrical Accessories 0 6 2

This course will give each student a deeper understanding of the complex electrical systems in today's automobile. Electrical accessories studied during this time will be power seats, power windows, wind shield wipers and washers, engine gauges, and instrument testing and repair.

*PME 215 Diesel Engines 2 6 4

This course is designed for the student desiring the diesel option. Emphasis in this course will be on the basic differences in construction, fuel injection, ignition and electrical systems encountered on diesel engines. Additional emphasis on minor repair, maintenance and trouble-shooting minor problems.

PME 216 Diesel Theory and Rebuilding 2 6 4

An advanced course dealing with construction, variations in design, and principles of operation. Live shopwork should include valve grinding, boring cylinders, installation of cam bearing, installation and timing injection pumps and injectors and use of precision instruments utilized in the performance of such operations.

*PME 217 Diesel Diagnosis 2 6 4

An advanced course dealing with fuels, lubricants, coolants and air systems. Shop work should include tune-up and testing procedures of various makes of two and four stroke cycle diesel engines. The dynamometer will be utilized as a test tool for diagnosis and trouble shooting various engines.

*PME 218 Diesel Fuel Injection 2 6 4

An advanced course dealing with the care and repair of fuel injection systems unique to automotive, construction and farm equipment. Shop work should include testing and rebuilding of fuel injectors, nozzles, injection and transfer pumps. The student will demonstrate proficiency in the use of calibrating and reconditioning equipment. Emphasis is placed on care and cleanliness required in this particular task.

PME 220 Applied Hydraulics 2 3 3

A specialized study of hydraulic and braking systems with emphasis on demonstration, testing, maintenance, and repair of various systems. Class, laboratory and field study of specific systems.

PME 224 Advanced Automatic Transmissions 3 6 5

This course is designed to provide a study in depth of automatic transmissions. Instruction includes classroom study, demonstrations, and student participation in disassembly, reassembly, and testing of selected transmissions. Special emphasis is placed on principles, function, construction, operation, servicing and "trouble-shooting" procedures and repair of various types of automatic transmissions.

**PME 230 Internship I 2 20 4

This course is designed for the cooperative student exercising either the automotive or diesel option and consists of a supervised lab in either field in such situations as a foreign car dealership or a trucking company or dealership, farm equipment, construction equipment or fixed diesel engine dealership. Lab work will parallel on campus lectures and will be accomplished with a training plan written especially for this situation with mutual agreement of the employer, the school, and the student.

**PME 231 Intership II 2 20 4

A cooperative work experience for students exercising the cooperative option in both automotive and diesel. Again a correlation of classroom lectures and on the job work experience in dealerships or companies.

**PME 232 Internship III (Automotive.) 2 20 4

Cooperative work experience in either major option correlated with on campus lectures under the agreed training plan with participating employers.

**PME 233 Internship IV (Automotive.) 2 20 4

Cooperative work experience in either major area correlating on campus lectures in both PME 212 or PME 218 and PME 207 under the agreed training plan with participating employers.

**PME 240 Internship I (Diesel) 2 20 4

This course is designed for the cooperative student exercising either the automotive or diesel option and consists of a supervised lab in either field in such situations as foreign car dealerships or a trucking company or dealership, farm equipment, construction equipment or fixed diesel engine dealership. Lab work will parallel on-campus lectures and will be accomplished with a training plan written especially for this situation with mutual agreement of the employer, the school, and the student.

**PME 241 Internship II (Diesel) 2 20 4

A cooperative work experience for students exercising the cooperative option in both automotive and diesel. Again, a correlation of classroom lectures and on-the-job work experience in dealerships or companies.

**PME 242 Internship III (Diesel) 2 20 4

Cooperative work experience in either major option correlated with on-campus lectures under the agreed training plan with participating employers.

**PME 243 Internship IV (Diesel) 2 20 4

Cooperative work experience in either major area correlating on-campus lectures in both PME 212 or PME 218 or PME 207 under the agreed training plan with participating employers.

PME 1010 Internal Combustion Engine Theory 2 6 4

A thorough study of internal combustion engine fundamentals, principles of operation, including horsepower calculations, efficiency, combustion theory, types of engines, cylinder and valve arrangments, lubrication, fuel and cooling systems. Laboratory work consisting of demonstrations, disassembly, inspection and re-assembly of various engines.

PME 1030 Automotive Electrical Systems 2 6 4

A thorough study of the automotive electrical systems components including the battery, cranking mechanism, generator, alternator, electrical accessories and wiring. Emphasis on correct procedures of testing, repair and rebuild using modern up-to-date testing equipment.

PME 1040 Auto Chassis and Brakes 2 6 4

A comprehensive study of present day chassis, suspension, braking and steering systems. Emphasis on correct diagnosis, rebuilding, allignment and adjustment of the various major components which make up these complex systems. Prerequisite: None

PME 1050 Automotive Power trains 2 6 4

Principles and functions of powertrain components; clutches, manual and automatic transmissions, torque convertors, drive shaft assemblies, rear axles and differential. Emphasis on trouble-shooting and correction of problems through correct service, repair and adjustment procedures.

PME 1060 Internal Combustion Engine Diagnosis 2 6 4

Theoretical and practical study in correlating previous instruction by applied practice of engine operation, running and adjusting, and trouble-shooting malfunctions. This study is performed in conjunction with the latest diagnostic equipment.

PME 1089 Hand Tools and Portable Power Tools 2 2 3

An in depth study of hand tools and portable power tools. Lab supervision will be provided for the various tools studied stressing good workmanship, proper care and storage of tools, and safety standards.

PME 1110 Internal Combustion Engine Rebuild 0 6 2

A continuation of PME 101 designed to allow the student to become familiarized with correct reconditioning, refitting and resurfacing procedure used in major engine rebuild and overhaul.
Prerequisite: PME 101

PME 1111 Auto Body Repair I 3 12 7

Basic principles of automobile construction, design, and manufacturing. A thorough study of angles, crown, and forming of steel into the complex contour of the present day vehicles. The student applies the basic principles of straightening, aligning, and painting of damaged areas.
Prerequisite: None

PME 1112 Auto Body Repair II 3 12 7

A thorough study of the requirements for a metal worker, including the use of essential tools, forming fender flanges and beads, and straightening typical auto body damage. The student begins acquiring skills such as shaping angles, crowns, and contour of the metal of ths body and fenders. Metal working and painting.
Prerequisite: PME 1111

PME 1120 Automotive Fuel Systems 2 6 4

A thorough study of the components which comprise the fuel system including fuel pumps, carburetors, and injectors.

PME 1130 Ignition Systems 1 3 2

A thorough study of the components which comprise the ignition systems including coils, distributors, spark plugs, electronic devices and wiring. In addition, emphasis on characterisics of ignition problems using basic testing equipment.

* Co-op Auto Option
** Co-op Diesel Option

WELDING (WLD)

WLD 102 Techniques of Welding II 1 3 2

An advanced course in oxyacetylene, electric mig and tig, welding. Projects are assigned to develop additional skills developed in WLD 1101 including a further study of metals, rods, glasses, procedures and safety precautions.
Prerequisite: WLD 1101

WLD 1101 Techniques of Welding I 1 3 2

Principles of oxyacetylene and electric welding, cutting and brazing procedures, safety precautions, storage and handling and practical experience in the use of oxyacetylene and arc welding equipment. Projects are assigned to develop skills in the use of equipment. In addition this course will consist of a study of metals, welding rods, glasses and special welding equipment.
Prerequisite: None

**WLD 1103 Inert Gas Welding I* 1 4 2

In depth study and practice of the mig and tig process of electric welding.
Prerequisite: WLD 1120, WLD 1202

**WLD 1104 Inert Gas Welding II* 1 4 2

A continuation of WLD 1103

**WLD 1105 Pipe Welding I* 1 4 2

Designed to provide practice in the welding of pressure piping in the horizontal, vertical, and horizontal fixed positions using shielded metal arc welding processes according to Sections VIII and IX of the ASME code.
Prerequisite: WLD 1103, WLD 1104

**WLD 1106 Pipe Welding II* 1 4 2

Continuation of WLD 1105

WLD 1110 Arc Welding I 2 6 4

Introduction to the principles of electric welding, including the study of machines and accessories on the market today. Welding demonstrations by the instructor and practice by students in the welding shop.
Prerequisite: None

WLD 1120 Arc Welding II 2 6 4

Continuation of WLD 1110 with more emphasis on technique development.
Prerequisite: WLD 1110

WLD 1201 Oxyacetylene Welding I 2 6 4

Introduction to basic oxyacetylene welding cutting and brazing. Demonstrations by the instructor and practice by students in the welding shop with emphasis on safety.
Prerequisite: None

WLD 1202 Oxyacetylene Welding II 2 6 4

Continuation of WLD 1201 with more time being spent on oxyacetylene setups.
Prerequisite: WLD 1201

*Not For Cooperative Students

***WLD 1203 Internship I* 2 20 4

This is the cooperative student's lab which is correlated with lectures in WLD 1104 in which the coop student receives actual on-the-job work experience, meeting quality control and production standards. The correlation will be by means of a training plan agreed upon by the employer, the school, and the student. The training plan contains stated objectives of the lecture and lab as to points covered and experiences expected in the industrial setting.

***WLD 1204 Internship II* 2 20 4

Cooperative student lab correlated with lecture from WLD 1105 and WLD 1106.

**Cooperative Students Only.

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Government Projects
Western Electric

ADMINISTRATIVE OFFICERS

William E. Taylor . . . . President

B.S. Eastern Kentucky University, Richmond, Kentucky; M.Ed. University of North Carolina, Greensboro. Additional study at N.C. State University and University of North Carolina-Chapel Hill.

J. Dillon Cherry . . . . Business Manager

B.S. Business Administration: East Carolina University; additional study at University of Nebraska.

Paul C. Davis . . . . Administrative Assistant

B.A. English, University of North Carolina-Chapel Hill; M.Ed. Administration, University of North Carolina-Chapel Hill.

Ray N. Easter . . . . Director, Student Personnel

A.B. Speech, Asbury College; M.Ed., Guidance and Counseling, University of North Carolina-Chapel Hill; additional study at Asbury Theological Seminary, Duke University, North Carolina State University, Iowa University, and California State College at Los Angeles.

Miles L. Eckard . . . . Dean of Instruction

B.S. Math, Applachian State University; MAT Math and Science, University of North Carolina-Chapel Hill; Ed.D. Community College Administration, North Carolina State University; additional study at East Tennessee State University, Duke University and Texas A & M University.

Terrence Hanner . . . . Registrar

B.S. History, Duke University: additional study at East Carolina University and IBM training schools.

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B.A. History, Elon College; additional study at Virginia Commonwealth University and University of North Carolina-Greensboro

Jack O'Kelley . . . . Director, Extension

B.S. Winston-Salem State University; M.S. A & T University.

Governor Robert W. Scott . . Special Consultant for Development

Mrs. Evelyn S. Tyler . . . . Area Coordinator for in-service education for teachers.

B.S. Primary Education; Library Science East Carolina College. Additional study: University of South Florida — Tampa; University of North Carolina — Greensboro; University of North Carolina — Chapel Hill.

F. Dave Turnage . . . . Director, Occupational Education

B.S. Mechanical Engineering, N.C. State University; Professional Degree, N.C. State University.

G. Dale Vaughn .... Director, Evening Programs

B.Ed. Industrial Arts, Eastern Illinois University; M.A., Industrial Education, Ohio State University; additional study at University of North Carolina-Greensboro and North Carolina State University.

COUNSELORS

Mrs. Ella Ray Chacey .... Evening Counselor

B.S. Commerce, University of Mississippi; M.Ed., University of North Carolina-Chapel Hill; additional study at University of North Carolina-Chapel Hill. Graduate certification in Guidance and Counseling from N.C. State Dept. of Instruction.

Richard E. Davis .... Financial Aid Officer

B.A., Political Science and Comparative Literature, University of N.C.-Chapel Hill; M.Ed., Administration and Guidance Services, University of N.C.-Chapel Hill; additional study at N.C. State University, Appalachian State University, Tulane University, Graduate certification by N.C. State Dept. of Public Instruction as Principal, Counselor, teacher in sciences, social sciences, and English.

Dale Donahue .... Admissions Officer and
Job Placement Officer

B.A., History, University of N.C.-Wilmington; M.A. Student Personnel Services, U.N.C-Chapel Hill.

Joseph H. Fryar .... Student Activities Coordinator

B.A., French, N.C. Central University, Durham, N.C.; M.A., French, N.C. Central University.

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APPLIED ARTS

Mr. Leonard Miller . . . . Division Chairman
Technical Illustration

A.A.S., Art, Technical Institute of Alamance; additional study at Elon College, George Washington University and Chapman College.

Mr. Harry Palmer . . . . Department Head
Commercial Art

B.A., Art, Richmond Professional Institute; additional study at Georgia State University, Atlanta, Ga., and University of North Carolina-Chapel Hill.

Miss Frances Durant . . . . Commercial Art

Elon College; additional study with Art Students League, New York City, University of North Carolina-Chapel Hill, and participated in the Jr. College European Study Tour through Southern Illinois University.

Mr. Wayne Feamster . . . . Department Head
Audio-Visual Technology

Richmond Professional Institute; additional study at the University of North Carolina-Greensboro, North Carolina State University, and N.C. Central University

BUSINESS TECHNOLOGIES

Mr. Charles Lowry . . . . Division Chairman

A.B., History, Mercer University, Macon, Georgia; M.Ed., University of North Carolina-Greensboro.

Mrs. Ellen Averitt . . . . Department Head
Secretarial Department

B.A., Business Education, Elon College; M.A. University of N.C.-Greensboro

Mr. Roy Campbell . . . . Business Administration

B.A., Business Administration, Elon College; M.S., Business Management, Virginia Commonwealth University

Mr. Vernon Cheek . . . . Department Head
Business Administration

B.S., Business Administration, Elon College; additional study at the University of North Carolina-Chapel Hill

Mr. Gil Dodson . . . . Department Head
Data Processing

B.A., Business Administration, Elon College C.D.P. Data Processing Management Association; additional study at North Carolina State University.

Mrs. Vickie Harrod . . . . Business Administration

BSSA, University of N.C.-Greensboro; additional study at UNC-Greensboro

Mr. Julius Kimbro .... Data Processing
B.S., Mathematics, North Carolina State University.

Mr. Tom Long .... Business Administration
B.S., Business Administration, University of North Carolina-Chapel Hill; J.D., Duke University

Mrs. Jean McMillan .... Secretarial Department
B.S., Secretarial Administration, University of North Carolina-Greensboro; additional study at the University of North Carolina-Greensboro, North Carolina State University, and Appalachian State Univ.

Mrs. Wanda Palmer .... Secretarial Department
B.A., English, Carson-Newman College, Jefferson City, Tennessee; M.S. University of N.C.-Greensboro.

Mr. Alan Saunders .... Business Administration
B.S., V.P.I., Blacksburg, Va.; M.Ed., University of N.C.-Greensboro; Ed.D., Duke University, Durham, N.C.

Mrs. Ruth Wade .... Secretarial Department
B.S., Business Education, North Carolina Central University; M.Ed., Business Education, University of North Carolina-Greensboro.

ENGINEERING TECHNOLOGIES

Mr. M. Glenn Klutz .... Division Chairman
Engineering Technologies
B.S.; Math Education and Electrical Engineering, N.C. State University; M.A. Guidance and Student Personnel, University of Alabama; additional study at N.C. State University and University of N.C.-Greensboro.

Mr. Pedro Alomia .... Department Head
Air Conditioning and
Refrigeration Technology
Inter-American Trade Scholarship; additional study at the University of North Carolina-Greensboro, North Carolina State, and the Technical Institute of Alamance. Twelve years experience as an air conditioning and refrigeration contractor and repairman.

Mr. Jerry Harris .... Department Head
Chemical Technology
A.A., Agriculture, N.E. Oklahoma A & M College; B.S., Animal Science, Oklahoma State University; M.S., Biochemistry & Nutrition, North Carolina State University; additional study at Duke University and the University of North Carolina-Chapel Hill.

Mr. Richard Jones .... Drafting and Design
Technology
B.S. Voc. Ed., N.C. State University, Raleigh, N.C., additional study at Technical Institute of Alamance.

Mr. James Peeples . . . . Department Head
Electronics Engineering
Technology

A.A.S., Capitol Institute of Technology; additional study at North Carolina State University.

Mr. Dale Pierce . . . . Drafting and Design
Technology

B.S. in Mechanical Engineering, V.P.I., Blacksburg, Va.; additional study at N.C.S.U.

Mr. Paul Scheetz . . . . Instructor-Coordinator
Cooperative Education

B.S. in Voc. Ind. Education from North Carolina State University; M.Ed. N.C. State University; additional study at N.C. State.

Mr. Ralph Stockard . . . . .Electronics

B.S.E.E., N.C. State University; additional study at N.C. State University and the University of N.C.-Chapel Hill.

HUMAN SERVICES

Mrs. Suella Klug . . . . Division Chairman

B.S. Nursing, Duke University, Durham, N.C. additional studies — East Carolina Univ.

Mrs. Mildred Lynch . . . . Dental Assisting

Certified Dental Assistant, University of North Carolina, School of Dentistry, additional study at N.C.S.U. and Elon College; completed Teacher Training Inst. in Dental Asst. at UNC-Chapel Hill.

Mrs. Margaret Hooper. . . . . Department Head
Dental Assisting

Diploma in Dental Assisting from the Technical Institute of Alamance; completed Teacher Training Inst. in Dental Asst. at UNC-Chapel Hill; additional study at Technical Institute of Alamance

Mrs. Celia O'Briant . . . . Early Childhood Education

B.A., Sociology, North Carolina State University; M.Ed., Guidance and Personnel Services, North Carolina State University; additional study at North Carolina State University and University of North Carolina-Greensboro. Graduate certification by North Carolina Department of Public Instruction in Counseling.

Mrs. Florence Pate . . . . Practical Nursing

R.N., Presbyterian-University Pennsylvania Hospital School of Nursing; additional study at Elon College.

Mrs. Martha Morton . . . . Early Childhood Education

A.B. Sociology, W.C. Greensboro;M.Ed. Elem. Ed. W.C. Greensboro.

Mrs. Diane Worth . . . . Early Childhood Education
B.A. Sociology/History, Bennett College, Greensboro; additional study at UNC-Greensboro.

Mrs. Kay Farrell . . . . Practical Nursing
R.N. Cabarrus Memorial Hosp. Sch. of Nursing, Concord, N.C.; additional study at UNC-Greensboro.

MECHANICAL OCCUPATIONS

Mr. John Stewart . . . . Division Chairman
A.S., Drafting, Indiana Institute of Technology; additional study at Purdue University, N.C. State University, University of N.C.-Greensboro, University of Illinois, Vocational Teacher Institute, and St. Francis College.

Mr. William Burt . . . . Auto Mechanics
A.A.S. State University of New York, Morrisville, N.Y.; B.S. Western Michigan University; M.S. State University of New York, Oswego, N.Y.

Mr. David Payne . . . . Air Conditioning and Refrigeration
Diploma, Air Conditioning, Technical Institute of Alamance; Diploma, Auto Mechanics, Technical Institute of Alamance; additional study at Westinghouse Factory school and Elon College.

Mr. Arthur Sykes . . . . Department Head
Machinist Trade
Certificate as Machinist from Western Electric Company; Fifteen years experience as machinist.

Mr. Carl Woodell . . . . Machine Shop
Certified tool maker from Western Electric Company; Twenty one years experience as tool maker.

RELATED STUDIES

Mr. James Swinney . . . . Department Head Physics
B.E.E., North Carolina State University; additional study at Harvard University, George Washington University, North Carolina State University and the University of North Carolina-Greensboro

Mr. Laurent Changuion . . . . Department Head English
Th.B., Theology/Christian Education, Holmes Theological Seminary; B.A. English, Elon College; additional study at UNC-Greensboro and Technical Institute of Alamance.

Mr. Tad Martin . . . . Mathematics
B.S., Math, East Carolina University; additional study at East Carolina University, UNC-Greensboro, and Technical Inst. of Alamance.

Mrs. Kaye Maves .... English

B.M. in Ed., Centenary College of La.; M.A., English, University of Oregon.

Mrs. Elizabeth McAfee .... English

B.A. Barnard College at Columbia Univ., N.Y.; MAT Emory University at Atlanta, Ga.; additional study at UNC-Chapel Hill.

Miss Rebecca Smith .... English

B.A., English, Berea College, Berea, Kentucky; M.A.C.I., U.N.C.-Chapel Hill; additional study at UNC-Greensboro.

Mr. Rudy Smith .... Mathematics

B.S., Mathematics, University of North Carolina-Chapel Hill; additional study at the University of North Carolina-Chapel Hill and the Technical Institute of Alamance.

LEARNING LAB

Mrs. Pearl Lee .... Coordinator

B.S., Elementary Education, Winston-Salem University; M.Ed., Speech Pathology and Audiology, University of North Carolina-Greensboro; additional study at Teachers College, Columbia University.

Mr. Robert Graham .... Evening Coordinator

B.A., Religion, Elon College; M.Ed. Industrial Education, North Carolina State University; additional study at the University of North Carolina-Greensboro, and Appalachian State University.

Mrs. Sonia Leath .... Coordinator of Tutorial Program

B.A., Religion, Mt. Holyoke College, South Hadley, Mass.

HUMAN RESOURCES DEVELOPMENT TRAINING

Mr. Tad Martin .... Director

B.S. Math, East Carolina University; additional study at East Carolina University, UNC-Greensboro, and Technical Inst. of Alamance

Mrs. Joan McIntyre .... Job Developer and Counselor

B.S. University of N.C.-Greensboro, M.Ed., Guidance and Counseling, UNC-Greensboro; additional study at UNC-Chapel Hill, East Carolina University, and Appalachian State University.

Mr. Larry Love .... Instructor and Counselor

A.A.S. Kittrell Jr. College, Kittrell, N.C.; B.S. Soc. Studies, Elizabeth City State University, Elizabeth City, N.C.; additional study at Technical Institute of Alamance

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HIGH SCHOOL TRANSCRIPT RELEASE

In order for new students to be admitted to T.I.A., a high school transcript must be received by our Admissions Office. If you are a new applicant, please sign this release and we will request your transcript for you. KEEP THIS RELEASE ATTACHED TO APPLICATION.

I authorize the release of my high school transcript to the Technical Institute of Alamance.

____________________ (Print Name Here)	____________________ (Signature)
____________________ (Name Before Marriage)	____________________ (Date)

REQUEST FOR ADMISSION/READMISSION

TECHNICAL INSTITUTE OF ALAMANCE

411 Camp Road, Burlington, North Carolina 27215
Phone 227-7471

SCHOOL USE ONLY
DO NOT WRITE IN
THIS COLUMN

1-6 ☐☐☐☐☐☐ ALPHA NUMBER

62-65 ☐☐☐☐ ST-COUNTY

66-67 ☐☐ GR-COMP
68-69 ☐☐ PHY-MED

70-71 ☐☐ MAT
72-73 ☐☐ ENG

74 ☐ ALG. I
75 ☐ ALG. II
76 ☐ GEO

77 ☐ TRAN.
78 ☐ DEV. M
79 ☐ DEV. E

22-23 ☐☐ INITIALS

PLEASE PRINT ONLY ONE CHARACTER PER BLOCK.

Use appropriate abbreviations to get requested information in blocks provided.
PLEASE PROVIDE ALL INFORMATION REQUESTED.

7-21 LAST NAME
22-31 FIRST NAME
32-41 MIDDLE/MAIDEN NAME
42-44 JR-SR-III, ETC.

45-53 SOCIAL SECURITY NUMBER

54
1 ☐ MALE
2 ☐ FEMALE

55-56 DAY
57-58 MONTH
59-60 19 YEAR
BIRTH DATE

BIRTH PLACE
CITY-COUNTY ____________________ STATE ____________

61
1 ☐ WHITE
2 ☐ BLACK
3 ☐ AM IND
4 ☐ OTHER
RACE

NORTH CAROLINA RESIDENT YES ☐ NO ☐

NORTH CAROLINA COUNTY OR STATE OF RESIDENCY ______________________________

PERMANENT ADDRESS IS THE ADDRESS OF YOUR PARENTS, GUARDIAN, OR SOMEONE WHO WILL KNOW HOW TO CONTACT YOU AFTER YOU LEAVE TIA.

IF YOUR PERMANENT ADDRESS AND LOCAL ADDRESS ARE THE SAME, PLEASE PRINT IT IN BOTH PLACES.

24-43 (PERMANENT ADDRESS) STREET
44-60 CITY & STATE
64-68 ZIP
69-75 PHONE

NEXT OF KIN ______________________________ RELATIONSHIP ______________________________

(IF DIFFERENT FROM PERMANENT ADDRESS) STREET & NUMBER ______________ CITY & STATE ______________ ZIP ______________ PHONE ______________

LOCAL ADDRESS REFERS TO A TEMPORARY ADDRESS YOU WILL BE USING ONLY WHILE AT TIA.

24-43 (LOCAL ADDRESS) STREET
44-60 CITY & STATE
64-68 ZIP
69-75 PHONE

HOW LONG HAVE YOU LIVED AT YOUR LOCAL ADDRESS? ______________________________

LAST HIGH SCHOOL ATTENDED

NAME ______________ CITY & STATE ______________ ZIP ______________ LAST YEAR ATTENDED ______________

DID YOU GRADUATE? YES ____ NO ____. IF "NO" DO YOU EXPECT TO GRADUATE? YES ____ MONTH & YEAR: ______________

NO ____ HIGHEST GRADE COMPLETED ______________

IF YOU DID NOT GRADUATE, DO YOU HAVE AN EQUIVALENCY CERTIFICATE (GED)? YES ____ NO ____. IF "YES" YOU MUST FURNISH TIA A COPY OF YOUR SCORES

SCHOOL USE ONLY
DO NOT WRITE IN
THIS COLUMN

24-27
☐☐ ☐☐
CURR. CODE

28-37
☐☐☐☐☐☐☐☐☐☐
ADVISOR

38-44
☐☐☐☐☐☐☐
HIGH SCHOOL CODE

45-46
☐☐
LAST YEAR ATTENDED

55-61
☐☐☐☐☐☐☐
COLLEGE CODE

CLASSIF
1-NF
2-RF
3-SO

62-65
☐☐☐☐
BEGAN STOPPED

66
☐

67
☐
ATTEND
1-Day
2-NIGHT

68-70
☐☐☐
TERM

71
☐
EMPLOY
1-UN
2-PT
3-FT

SCHOOLS OR COLLEGES ATTENDED AFTER LEAVING HIGH SCHOOL, IF ANY

	COLLEGE NAME	CITY & STATE	ZIP	YEAR ATTENDED FROM	YEAR ATTENDED TO	HIGHEST COMPLETED CLASS (FR. SO. JR. SR. GRAD)
1.				19 ____	19 ____	
2.				19 ____	19 ____	
3.				19 ____	19 ____	

HAVE YOU EVER ATTENDED TIA BEFORE? YES ____ NO ____ LAST TERM QUARTER ____ YEAR ____ PROGRAM ____________

IN WHAT PROGRAM OR FIELD OF STUDY DO YOU PLAN TO ENROLL? ____________

DO YOU PLAN TO ATTEND (________ DAY ________ EVENING) CLASSES? WHICH QUARTER DO YOU PLAN TO ENROLL? ____ SUMMER (JUNE-AUG.) ____ WINTER (DEC.-FEB.) ____ FALL (SEPT.-NOV.) ____ SPRING (MAR.-MAY)

WILL YOU BE EMPLOYED WHILE ATTENDING TIA?
1. UNEMPLOYED ____
2. PART-TIME ____ EMPLOYER ____________ PHONE NUMBER ____________
3. FULL-TIME ____
EMPLOYER'S ADDRESS ____________

DO YOU BELIEVE THAT YOU NEED FINANCIAL AID? YES ☐ NO ☐ IF SO, PLEASE CONTACT FINANCIAL AID OFFICER.

FINANCIAL AID

WHAT TYPES OF FINANCIAL ASSISTANCE WILL YOU HAVE WHILE ATTENDING TIA?

72 ☐ MANPOWER DEV. & TRAINING
74 ☐ SOCIAL SECURITY BENEFITS
76 ☐ VETERAN'S BENEFITS
78 ☐ OTHER ____________
73 ☐ SCHOLARSHIP ____________ NAME OF
75 ☐ VOCATIONAL REHABILITATION
77 ☐ WORK STUDY
79 ☐ NONE

HEALTH INFORMATION

Rate your general health as ☐ Excellent, ☐ Good ☐ Fair, or ☐ Poor

Do you have any physical handicaps or requirements that interfere with your studies or work that you might assume, or have you had or do you now have

	YES	NO		YES	NO		YES	NO
Rheumatic Fever	____	____	High Blood Pressure	____	____	Do you use Crutches or Wheelchair?	____	____
Heart Disease	____	____	Speech Disorders	____	____	Psychiatric Problems	____	____
Diabetes	____	____	Hearing Problems	____	____	Other (Explain) ____________		
Epilepsy	____	____	Eye (sight) Problems	____	____			

NAME AND ADDRESS OF YOUR REGULAR PHYSICIAN: ____________ ____________ Telephone Number

IN CASE OF AN EMERGENCY, PERMISSION IS GRANTED TO CALL A PHYSICIAN OTHER THAN THE ABOVE NAMED. ____ YES ____ NO

Are you at present receiving medical care of any sort? ________ If so, please describe and give dates: ____________

I understand that I am responsible for having official transcripts of my previous college records, if any, sent directly to the Admissions Officer, Technical Institution of Alamance, 411 Camp Road, Burlington, North Carolina 27215. I certify that I have listed above all schools or colleges attended after high school if any.

Date of Application ____________ Applicant's Signature ____________

IF MARRIED, PRINT NAME BEFORE MARRIAGE HERE: ____________

THE TECHNICAL INSTITUTE OF ALAMANCE

411 CAMP ROAD BURLINGTON, N.C.
27215

North Carolina Collection
The Library, University of North Carolina
Chapel Hill, NC 27514

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